



HALEY & ALDRICH, INC.
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Oakland, CA 94612
510.879.4544

30 August 2019
File No. 130072-022

United States Environmental Protection Agency, Region IX
75 Hawthorne Street (SFD-7-3)
San Francisco, California 94105

Attention: Ms. Karen Jurist, Project Manager
California Site Cleanup Section 3

Subject: June 2019 Progress Report
Cooper Drum Company Superfund Site
South Gate, California

Dear Ms. Jurist:

On behalf of the Cooper Drum Cooperating Parties Group (CDCPG), Haley & Aldrich, Inc. prepared this progress report to summarize project work performed at the Cooper Drum Company Superfund Site (Site) during the June 2019 reporting period. This progress report also provides an update on planned work for the two months following the reporting period. This report is being submitted pursuant to Section M of Appendix C of the Consent Decree entered by the United States District Court Central District of California, Western Division, Case 2:15-cv-09931 on 20 April 2016.

Project Work Performed in June 2019

PROJECT MANAGEMENT, COMMUNICATION, AND REPORTS

- April 2019 Progress Report was submitted to the Environmental Protection Agency (EPA) on 28 June 2019;
- Soil Vapor Extraction Rebound Testing Technical Memorandum was submitted to the EPA on 28 June 2019; and
- Project communication and management tasks regarding scheduling, staffing, operation, maintenance, and monitoring (OMM) were completed.

CONSTRUCTION-RELATED TASKS

No construction-related tasks were completed during this period.

OPERATION AND MAINTENANCE

Activities

OMM inspections were performed on a biweekly basis in June 2019. During this reporting period, the following activities were completed:

- The Operable Unit 1 (OU1) groundwater extraction system recovered approximately 424,789 gallons of groundwater during this reporting period. The total volume was calculated from the reported totalizer readings that were measured at the effluent discharge point. The groundwater system had an average flow rate of approximately 9.8 gallons per minute (gpm) and operated continuously during the reporting period.
- The soil vapor extraction (SVE) system was in cyclical mode during the reporting period. The SVE system was active for approximately 329 hours from 12 to 26 June 2019 with a 98 percent uptime. Operation focused on wells DPE-1 to DPE-14 and SVE-10. The SVE system was inactive from 1 to 11 June 2019 and 27 to 30 June 2019 because of scheduled cyclical operation off-cycles.
- Total influent vapor flow rate ranged from 500 to 543 standard cubic feet per minute, with influent vacuum ranging from 91 to 92 inches of water.
- Soil vapor condensate was not generated during the reporting period.

Total volatile organic compound (VOC) concentrations for the extraction wells were measured on-Site using a handheld photoionization detector (PID). Table I summarizes the treatment system, manifold, and individual DPE well vapor readings collected during SVE operation.

Sample Collection and Analysis

- Vapor samples were collected from the vapor treatment system influent, mid-point, and effluent on 26 June 2019 and submitted to American Analytics for quantification of VOCs using EPA Method TO-15 and Total Non-Methane Organic Compounds (TNMOC; measured as hexane using EPA Method TO-3). The concentrations of detected VOCs in the effluent samples were below the exhaust limits in the South Coast Air Quality Management District's (SCAQMD) Various Locations Permit. The analytical results are summarized in Table II; the laboratory report is included as Attachment A.
- Water samples were collected from the groundwater extraction treatment system on 12 June 2019. Samples were submitted to American Analytics and analyzed for VOCs using EPA Method 8260B and 1,4-dioxane using EPA Method 8270M-isotope dilution. The analytical results for these samples are summarized in Table III; the laboratory report is included in Attachment B.
- Quarterly water samples were collected from the groundwater extraction treatment system on 19 June 2019. The system samples were collected to comply with Los Angeles County Sanitation District (LACSD) Industrial Wastewater Discharge Permit (IWDP). The samples were submitted to American Analytics and analyzed for the following:
 - VOCs using EPA Method 624;
 - Semi-volatile organic compounds using EPA Method 625;

- Chemical oxygen demand by EPA Method 410.4;
- pH by Method SM4500H+;
- Total suspended solids by Method SM2540D; and
- Dissolved sulfides by Method SM4500-S.

The concentrations measured in the effluent water sample were below the compliance limits specified in the LACSD IWDP. The analytical results for this sample are summarized in Table IV; laboratory reports are included in Attachment C.

- Soil vapor samples were collected in one-liter Tedlar® bags from select vapor probes on 12 June 2019 and submitted to American Analytics for VOC analysis by EPA Method TO-15. Laboratory reports are included in Attachment D and results will be discussed in the First Semi-Annual 2019 Combined Groundwater Monitoring and Performance Evaluation Report (PER).

Remediation Progress

A summary of the mass removal by the SVE/DPE and groundwater treatment systems and the volume of groundwater treated during this reporting period are provided below:

- Approximately 0.20 pounds of chemicals of concern (COC) were removed by the groundwater extraction system during the reporting period;
- Approximately 24 pounds of COC have been removed by the groundwater extraction system since July 2012;
- No perched (OU2) groundwater was extracted during the reporting period. According to perched groundwater gauging results, the perched zone has been dry since 2015;
- Cumulative volumes of extracted perched (OU2) and OU1 groundwater were approximately 1,117,865 gallons and 36,718,483 gallons, respectively (Figure 1);
- Approximately 0.95 pounds of COC were removed by the SVE system during the reporting period; and
- The cumulative COC and VOC mass removal by the SVE system were approximately 583 and 801 pounds, respectively. This information is shown graphically in Figure 2.

OTHER FIELD-RELATED TASKS

- Collected first semi-annual OU1 groundwater samples.

Project Work Performed or Planned in July and August 2019

Project tasks performed or planned for July and August 2019 are listed below:

- Continue cyclical operation of SVE and DPE wells;
- Collect vapor samples from the soil vapor treatment system on a monthly basis during operation per substantive requirements specified in the South Coast Air Quality Management District (SCAQMD) various locations permit;

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- Continue OU1 groundwater extraction from wells EW-2, EW-4, EW-5, EW-7A/B, and EW-A through July; in August terminate extraction at EW-2 at the start of the Aerobic Co-metabolic Biodegradation Pilot Test;
- Collect water samples from the groundwater treatment system on a monthly basis for performance evaluation;
- Submit an Addendum to the Aerobic Co-metabolic Biodegradation Pilot Test Work Plan, and monthly progress reports; and
- Install groundwater wells, perform well development, conduct aquifer testing, and install the pilot system and conveyance lines for implementation of the Aerobic Co-metabolic Biodegradation Pilot Test Work Plan.

Please call Mr. Peter Bennett at (510) 879-4547 or Mr. John Lang at (513) 325-2732 if you have any questions regarding this progress report.

Sincerely yours,
HALEY & ALDRICH, INC.



Christopher J. Tsatsios, PE
Associate Engineer



Peter Bennett, CHG
Principal Hydrogeologist

Attachments:

- Table I – Field Monitoring Results for Soil Vapor
- Table II – Vapor Treatment System Analytical Results
- Table III – Groundwater Treatment System Analytical Results
- Table IV – Industrial Wastewater Discharge Permit Compliance Analytical Results
- Figure 1 – Cumulative Volume of Groundwater Extracted from OU1 and OU2
- Figure 2 – Cumulative COC and VOC Mass Removal by SVE System
- Attachment A – Soil Vapor Treatment System Laboratory Analytical Report
- Attachment B – Groundwater Treatment System Laboratory Analytical Report
- Attachment C – Industrial Wastewater Discharge Analytical Report
- Attachment D – Performance Evaluation Analytical Report

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c: California Department of Toxic Substances Control; Attn: Ms. Lori Parnass
Cooper Drum Cooperating Parties Group; Attn: Mr. Kyle Christie
Cooper Drum Cooperating Parties Group; Attn: Mr. John Lang
Cooper Drum Cooperating Parties Group; Attn: Ms. Beth Hesse
Gilbane, Inc.; Attn: Mr. Don Gruber
Los Angeles Unified School District; Attn: Mr. Anthony Espinoza
Los Angeles Unified School District; Attn: Mr. Steven Morrill
United States Environmental Protection Agency Region 9; Attn: Ms. Tessa Berman
City of South Gate Public Works Department, Attn: Mr. Chris Castillo
City of South Gate Public Works Department, Attn: Mr. Clint Herrera
City of South Gate Public Works Department, Attn: Mr. Victor Chavez
City of South Gate Public Works Department, Attn: Mr. Jose Loera
City of South Gate Public Works Department, Attn: Ms. Gladis Deras
City of South Gate Community Development Department, Attn: Mr. Joe Perez

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TABLES

TABLE I

FIELD MONITORING RESULTS FOR SOIL VAPOR
 COOPER DRUM COMPANY SUPERFUND SITE
 SOUTH GATE, CALIFORNIA

Page 1 of 1

Date	CONCENTRATIONS AT SVE WELLS - Manifold (ppmv)										CONCENTRATIONS AT SVE SYSTEM (ppmv)			
	SVE-3	SVE-4	SVE-5	SVE-6	SVE-7	SVE-8	SVE-9	SVE-10	SVE-11	SVE-12	HWA	DPA	INF	EFF
6/12/2019	--	--	--	--	--	--	--	8.3	--	--	0.0	4.2	0.8	0.0
6/19/2019	--	--	--	--	--	--	--	6.4	--	--	0.0	9.1	0.6	0.0
6/26/2019	--	--	--	--	--	--	--	1.4	--	--	0.0	5.8	0.5	0.0
Date	CONCENTRATIONS AT DPE WELLS - Manifold (ppmv)													
	DPE-1	DPE-2	DPE-3	DPE-4	DPE-5	DPE-6	DPE-7	DPE-8	DPE-9	DPE-10	DPE-11	DPE-12	DPE-13	DPE-14
6/12/2019	0.0	0.0	0.0	0.0	0.0	0.0	22.3	0.0	0.0	0.0	0.0	0.0	8.8	0.0
6/19/2019	0.0	0.0	0.0	0.0	2.3	0.0	28.6	0.0	0.0	0.0	0.0	0.0	14.7	0.0
6/26/2019	0.0	0.0	0.0	0.0	0.8	0.0	21.7	0.0	0.0	0.0	0.0	0.0	8.6	0.0

Notes:

Sample results collected using photoionization detector (PID)

DPA = Influent from Drum Processing Area

DPE = Dual Phase Extraction

EFF = Effluent

HWA = Influent from Hard Wash Area

INF = Influent

ppmv = parts per million by volume

SVE = Soil Vapor Extraction

VOC = Volatile Organic Compound

-- = not measured

TABLE II

VAPOR TREATMENT SYSTEM ANALYTICAL RESULTS
COOPER DRUM COMPANY SUPERFUND SITE
SOUTH GATE, CALIFORNIA

Analyte	Vapor Concentrations ($\mu\text{g}/\text{m}^3$)			SCAQMD Various Locations Permit
	Influent 6/26/2019	Midpoint 6/26/2019	Effluent 6/26/2019	Exhaust Limit $\mu\text{g}/\text{m}^3$
Benzene	ND<9.6	ND<9.6	ND<9.6	63.9
1,1-Dichloroethane	47	51	31	405
1,2-Dichloroethane	ND<10	ND<10	ND<10	40.5
1,1-Dichloroethene	21	22	9.8	NA
trans-1,2-Dichloroethene	20	22	9.8	NA
cis-1,2-Dichloroethene	210	210	89	NA
Ethylbenzene	ND<10	ND<10	ND<10	868
Methyl-t-Butyl Ether (MTBE)	ND<10	ND<10	ND<10	721
Methylene Chloride	ND<49	ND<49	ND<49	730
Tetrachloroethene (PCE)	910	430	ND<14	204
1,1,2,2-Tetrachloroethane	ND<50	ND<50	ND<50	68.7
Trichloroethene (TCE)	400	380	ND<11	1075
Vinyl Chloride	ND<10	ND<10	4.5	25.6
1,2-Dichloropropane	ND<10	ND<10	ND<10	NA
1,2,3-Trichloropropane	ND<12	ND<12	ND<12	NA
1,4-Dioxane	ND<10	ND<10	ND<10	NA
TNMOC as Hexane*	ND<1.2	ND<1.2	ND<1.2	NA

Notes:

Samples were submitted to American Analytics and analyzed for volatile organic compounds using EPA Method TO-15 and Total Non-Methane Organic Compounds measured as hexane using EPA Method TO-3

*TNMOC results are shown in parts per million by volume (ppmv)

ND Not detected at a concentration equal to or greater than indicated reporting limit

$\mu\text{g}/\text{m}^3$ micrograms per cubic meter

TNMOC Total Non-Methane Organic Compounds

SCAQMD South Coast Air Quality Management District

NA Chemical Exhaust Limit Not Listed in SCAQMD Various Locations Permit

TABLE III
GROUNDWATER TREATMENT SYSTEM ANALYTICAL RESULTS
COOPER DRUM COMPANY SUPERFUND SITE
SOUTH GATE, CALIFORNIA

Analyte	Groundwater Concentrations ($\mu\text{g/L}$)		
	OU1 Groundwater Extraction Wells Influent	OU2 Dual Phase Extraction Wells Influent	OU1 & OU2 Combined Flow Effluent
	6/12/2019	NM	6/12/2019
LACSD TOTAL VOC EFFLUENT DISCHARGE LIMIT	-	-	1,000
CALCULATED TOTAL VOC EFFLUENT DISCHARGE	-	-	51
Benzene	1.2	NM	0.89
Bromodichloromethane	ND<0.20	NM	ND<0.20
Bromoform	ND<0.50	NM	ND<0.50
Bromomethane	ND<0.50	NM	ND<0.50
Carbon Tetrachloride	ND<0.30	NM	ND<0.30
Chlorobenzene	ND<0.30	NM	ND<0.30
Chloroethane	ND<0.50	NM	ND<0.50
Chloroform	ND<0.30	NM	ND<0.30
Chloromethane	ND<0.40	NM	ND<0.40
Dibromochloromethane	ND<0.30	NM	ND<0.30
1,2-Dichlorobenzene	ND<0.30	NM	ND<0.30
1,3-Dichlorobenzene	ND<0.10	NM	ND<0.10
1,4-Dichlorobenzene	ND<0.30	NM	ND<0.30
1,1-Dichloroethane	2.0	NM	1.9
1,2-Dichloroethane	1.4	NM	1.4
1,1-Dichloroethene	0.98	NM	0.79
cis-1,2-Dichloroethene	35	NM	32
trans-1,2-Dichloroethene	5.0	NM	3.7
1,2-Dichloropropane	ND<0.50	NM	ND<0.50
cis-1,3-Dichloropropene	ND<0.20	NM	ND<0.20
trans-1,3-Dichloropropene	ND<0.20	NM	ND<0.20
Ethylbenzene	ND<0.20	NM	ND<0.20
Methylene Chloride	ND<5.0	NM	ND<5.0
1,1,2,2-Tetrachloroethane	ND<0.30	NM	ND<0.30
Tetrachloroethene (PCE)	ND<0.50	NM	ND<0.50
Toluene	ND<0.30	NM	ND<0.30
1,1,1-Trichloroethane	ND<0.30	NM	ND<0.30
Trichloroethene (TCE)	1.8	NM	1.6
1,2,3-Trichloropropane	ND<0.30	NM	ND<0.30
Vinyl Chloride	0.79	NM	0.51
1,4-Dioxane	8.4	NM	8.6

Notes:

Samples were submitted to American Analytics and analyzed for VOCs using EPA Method 8260B

and 1,4-dioxane using EPA Method 8270M-isotope dilution

LACSD = Los Angeles County Sanitation District

VOC = Volatile Organic Compound

ND = Not detected at a concentration equal to or greater than indicated reporting limit

OU1 = Operable Unit 1

OU2 = Operable Unit 2

J = The detected concentration is below the reporting limit and is estimated.

$\mu\text{g/L}$ = micrograms per liter

NM = Not Measured due to OU-2 being dewatered

TABLE IV
 INDUSTRIAL WASTEWATER DISCHARGE PERMIT COMPLIANCE ANALYTICAL RESULTS
 COOPER DRUM COMPANY SUPERFUND SITE
 SOUTH GATE, CALIFORNIA

Analyte	IWDP Effluent Concentrations	Permit Limit
	6/19/2019	
Volatile TTO, Total (µg/L)	7.6	1,000
Semi-Volatile TTO, Total (µg/L)	ND	1,000
Suspended Solids (mg/L)	7.6J	-
Soluble Sulfide (mg/L)	ND<0.025	0.1
Chemical Oxygen Demand (mg/L)	23	-
pH	6.9	Federal Daily Minimum: 5.0 S.U. Local Daily Minimum: 6.0 S.U.

Notes:

TTO = Total Toxic Organics

ND = Not detected at a concentration equal to or greater than indicated reporting limit

mg/L = milligrams per liter

J = The detected concentration is below the reporting limit and is estimated.

FIGURES

FIGURE 1

CUMULATIVE VOLUME OF GROUNDWATER EXTRACTED FROM OU1 AND OU2
COOPER DRUM COMPANY SUPERFUND SITE
SOUTH GATE, CALIFORNIA

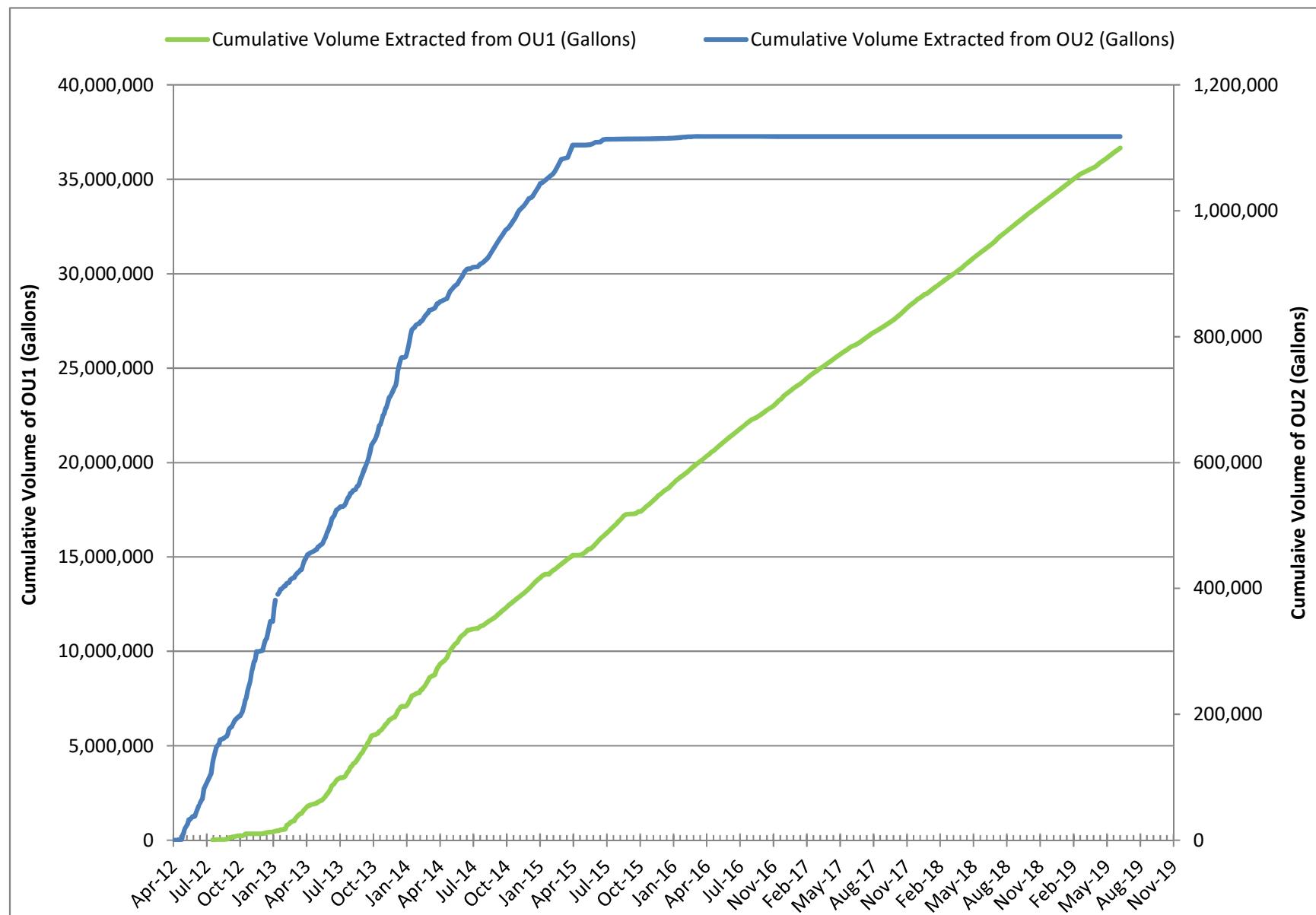
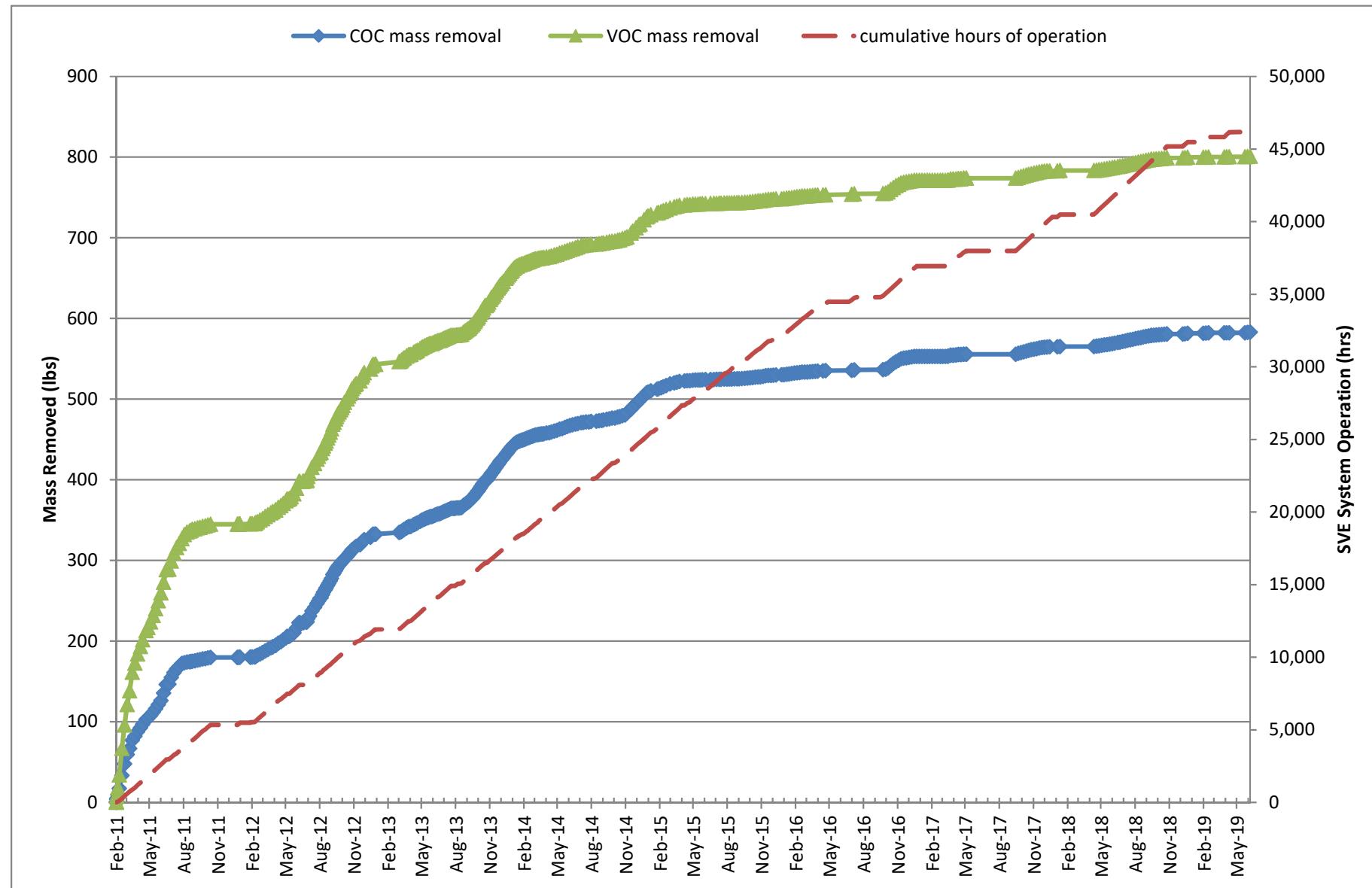


FIGURE 2

CUMULATIVE COC AND VOC MASS REMOVAL BY SVE SYSTEM
COOPER DRUM COMPANY SUPERFUND SITE
SOUTH GATE, CALIFORNIA



ATTACHMENT A

Soil Vapor Treatment System Laboratory Analytical Report



9765 Eton Avenue
Chatsworth
California 91311
Tel: (818) 998-5547
Fax: (818) 998-7258

July 09, 2019

Peter Bennett
Haley & Aldrich (Oakland)
1956 Webster St., Suite 450
Oakland, CA 94612

Re : Cooper Drum - South Gate / 130072-024
A874363 / 9F26010

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received on 06/26/19 12:40 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Program Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report or require additional information please call me at American Analytics.

Sincerely,

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874363
Date Received: 06/26/19
Date Reported: 07/09/19

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
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TO-15 (Mid Level) ppbv

SVE-VGACE-062619-0001	9F26010-01	Vapor	5	06/26/19 10:40	06/26/19 12:40
SVE-VGACM-062619-0001	9F26010-02	Vapor	5	06/26/19 10:50	06/26/19 12:40
SVE-VGACI-062619-0001	9F26010-03	Vapor	5	06/26/19 10:55	06/26/19 12:40

TO-3 VOCs as Hexane

SVE-VGACE-062619-0001	9F26010-01	Vapor	5	06/26/19 10:40	06/26/19 12:40
SVE-VGACM-062619-0001	9F26010-02	Vapor	5	06/26/19 10:50	06/26/19 12:40
SVE-VGACI-062619-0001	9F26010-03	Vapor	5	06/26/19 10:55	06/26/19 12:40


Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 0.25
Method: VOCs by GCMS EPA TO-15

AA Project No: A874363
Date Received: 06/26/19
Date Reported: 07/09/19
Sampled: 06/26/19
Prepared: 06/27/19
Analyzed: 06/27/19

SVE-VGACE-062619-0001

9F26010-01 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
Acetone	0.016	ug/L	0.050	6.9	ppbv	21
Benzene	<0.0024	ug/L	0.0096	<0.75	ppbv	3.0
Benzyl chloride	<0.013	ug/L	0.050	<2.4	ppbv	9.7
Bromodichloromethane	<0.013	ug/L	0.050	<1.9	ppbv	7.5
Bromoform	<0.012	ug/L	0.050	<1.2	ppbv	4.8
Bromomethane	<0.0025	ug/L	0.010	<0.65	ppbv	2.6
2-Butanone (MEK)	<0.013	ug/L	0.050	<4.2	ppbv	17
Carbon Disulfide	<0.012	ug/L	0.050	<4.0	ppbv	16
Carbon Tetrachloride	<0.0033	ug/L	0.013	<0.52	ppbv	2.1
Chlorobenzene	<0.0025	ug/L	0.010	<0.55	ppbv	2.2
Chloroethane	<0.0025	ug/L	0.010	<0.95	ppbv	3.8
Chloroform	<0.0024	ug/L	0.0098	<0.50	ppbv	2.0
Chloromethane	<0.0025	ug/L	0.0099	<1.2	ppbv	4.8
Dibromochloromethane	<0.0049	ug/L	0.020	<0.58	ppbv	2.3
1,2-Dibromoethane (EDB)	<0.005	ug/L	0.020	<0.65	ppbv	2.6
1,2-Dichlorobenzene	<0.005	ug/L	0.020	<0.82	ppbv	3.3
1,3-Dichlorobenzene	<0.005	ug/L	0.020	<0.82	ppbv	3.3
1,4-Dichlorobenzene	<0.005	ug/L	0.020	<0.82	ppbv	3.3
Dichlorodifluoromethane (R12)	<0.012	ug/L	0.049	<2.5	ppbv	10
1,1-Dichloroethane	0.031	ug/L	0.0081	7.6	ppbv	2.0
1,2-Dichloroethane (EDC)	<0.0025	ug/L	0.010	<0.62	ppbv	2.5

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 0.25
Method: VOCs by GCMS EPA TO-15

AA Project No: A874363
Date Received: 06/26/19
Date Reported: 07/09/19
Sampled: 06/26/19
Prepared: 06/27/19
Analyzed: 06/27/19

SVE-VGACE-062619-0001

9F26010-01 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
cis-1,2-Dichloroethylene	0.089	ug/L	0.0079	23	ppbv	2.0
1,1-Dichloroethylene	0.0098	ug/L	0.0079	2.5	ppbv	2.0
trans-1,2-Dichloroethylene	0.0098	ug/L	0.0079	2.5	ppbv	2.0
1,2-Dichloropropane	<0.0025	ug/L	0.010	<0.55	ppbv	2.2
trans-1,3-Dichloropropylene	<0.0025	ug/L	0.01	<0.55	ppbv	2.2
cis-1,3-Dichloropropylene	<0.0025	ug/L	0.01	<0.55	ppbv	2.2
Dichlorotetrafluoroethane	<0.013	ug/L	0.050	<1.8	ppbv	7.2
1,4-Dioxane	<0.0025	ug/L	0.010	<0.70	ppbv	2.8
Ethylbenzene	<0.0025	ug/L	0.01	<0.58	ppbv	2.3
4-Ethyltoluene	<0.0025	ug/L	0.0098	<0.50	ppbv	2.0
Hexachlorobutadiene	<0.013	ug/L	0.050	<1.2	ppbv	4.7
2-Hexanone (MBK)	<0.012	ug/L	0.049	<3.0	ppbv	12
Isopropanol (IPA)	<0.025	ug/L	0.10	<10	ppbv	41
Methyl-tert-Butyl Ether (MTBE)	<0.0025	ug/L	0.010	<0.70	ppbv	2.8
Methylene Chloride	<0.012	ug/L	0.049	<3.5	ppbv	14
4-Methyl-2-pentanone (MIBK)	<0.012	ug/L	0.049	<3.0	ppbv	12
Styrene	<0.0024	ug/L	0.0098	<0.58	ppbv	2.3
1,1,2,2-Tetrachloroethane	<0.013	ug/L	0.050	<1.8	ppbv	7.3
Tetrachloroethylene (PCE)	<0.0034	ug/L	0.014	<0.50	ppbv	2.0
Toluene	<0.012	ug/L	0.049	<3.2	ppbv	13
1,2,4-Trichlorobenzene	<0.005	ug/L	0.020	<0.68	ppbv	2.7

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 0.25
Method: VOCs by GCMS EPA TO-15

AA Project No: A874363
Date Received: 06/26/19
Date Reported: 07/09/19
Sampled: 06/26/19
Prepared: 06/27/19
Analyzed: 06/27/19

SVE-VGACE-062619-0001

9F26010-01 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
1,1,2-Trichloroethane	<0.005	ug/L	0.020	<0.92	ppbv	3.7
1,1,1-Trichloroethane	<0.005	ug/L	0.020	<0.92	ppbv	3.7
Trichloroethylene (TCE)	<0.0027	ug/L	0.011	<0.50	ppbv	2.0
Trichlorofluoromethane (R11)	<0.013	ug/L	0.050	<2.2	ppbv	8.9
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.012	ug/L	0.050	<1.6	ppbv	6.5
1,3,5-Trimethylbenzene	<0.0025	ug/L	0.0098	<0.50	ppbv	2.0
1,2,4-Trimethylbenzene	<0.0025	ug/L	0.0098	<0.50	ppbv	2.0
Vinyl acetate	<0.0025	ug/L	0.0099	<0.70	ppbv	2.8
Vinyl chloride	0.0045	ug/L	0.01	1.7	ppbv	3.9
o-Xylene	<0.0025	ug/L	0.01	<0.58	ppbv	2.3
m,p-Xylenes	<0.0025	ug/L	0.01	<0.58	ppbv	2.3
1,2,3-Trichloropropane	<0.003	ug/L	0.012	<0.50	ppbv	2.0
Surrogates		%REC			%REC Limits	
4-Bromofluorobenzene		105 %				70-130


Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 2
Method: VOCs by GCMS EPA TO-15

AA Project No: A874363
Date Received: 06/26/19
Date Reported: 07/09/19
Sampled: 06/26/19
Prepared: 06/27/19
Analyzed: 06/27/19

SVE-VGACM-062619-0001

9F26010-02 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
Acetone	<0.100	ug/L	0.050	<42	ppbv	21
Benzene	<0.019	ug/L	0.0096	<6.0	ppbv	3.0
Benzyl chloride	<0.10	ug/L	0.050	<19	ppbv	9.7
Bromodichloromethane	<0.10	ug/L	0.050	<15	ppbv	7.5
Bromoform	<0.099	ug/L	0.050	<9.6	ppbv	4.8
Bromomethane	<0.020	ug/L	0.010	<5.2	ppbv	2.6
2-Butanone (MEK)	<0.10	ug/L	0.050	<34	ppbv	17
Carbon Disulfide	<0.100	ug/L	0.050	<32	ppbv	16
Carbon Tetrachloride	<0.026	ug/L	0.013	<4.2	ppbv	2.1
Chlorobenzene	<0.020	ug/L	0.010	<4.4	ppbv	2.2
Chloroethane	<0.020	ug/L	0.010	<7.6	ppbv	3.8
Chloroform	<0.020	ug/L	0.0098	<4.0	ppbv	2.0
Chloromethane	<0.020	ug/L	0.0099	<9.6	ppbv	4.8
Dibromochloromethane	<0.039	ug/L	0.020	<4.6	ppbv	2.3
1,2-Dibromoethane (EDB)	<0.040	ug/L	0.020	<5.2	ppbv	2.6
1,2-Dichlorobenzene	<0.040	ug/L	0.020	<6.6	ppbv	3.3
1,3-Dichlorobenzene	<0.040	ug/L	0.020	<6.6	ppbv	3.3
1,4-Dichlorobenzene	<0.040	ug/L	0.020	<6.6	ppbv	3.3
Dichlorodifluoromethane (R12)	<0.099	ug/L	0.049	<20	ppbv	10
1,1-Dichloroethane	0.051	ug/L	0.0081	13	ppbv	2.0
1,2-Dichloroethane (EDC)	<0.020	ug/L	0.010	<5.0	ppbv	2.5

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 2
Method: VOCs by GCMS EPA TO-15

AA Project No: A874363
Date Received: 06/26/19
Date Reported: 07/09/19
Sampled: 06/26/19
Prepared: 06/27/19
Analyzed: 06/27/19

SVE-VGACM-062619-0001

9F26010-02 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
cis-1,2-Dichloroethylene	0.21	ug/L	0.0079	53	ppbv	2.0
1,1-Dichloroethylene	0.022	ug/L	0.0079	5.5	ppbv	2.0
trans-1,2-Dichloroethylene	0.022	ug/L	0.0079	5.6	ppbv	2.0
1,2-Dichloropropane	<0.020	ug/L	0.010	<4.4	ppbv	2.2
trans-1,3-Dichloropropylene	<0.020	ug/L	0.01	<4.4	ppbv	2.2
cis-1,3-Dichloropropylene	<0.020	ug/L	0.01	<4.4	ppbv	2.2
Dichlorotetrafluoroethane	<0.10	ug/L	0.050	<14	ppbv	7.2
1,4-Dioxane	<0.020	ug/L	0.010	<5.6	ppbv	2.8
Ethylbenzene	<0.020	ug/L	0.01	<4.6	ppbv	2.3
4-Ethyltoluene	<0.020	ug/L	0.0098	<4.0	ppbv	2.0
Hexachlorobutadiene	<0.10	ug/L	0.050	<9.4	ppbv	4.7
2-Hexanone (MBK)	<0.098	ug/L	0.049	<24	ppbv	12
Isopropanol (IPA)	<0.20	ug/L	0.10	<82	ppbv	41
Methyl-tert-Butyl Ether (MTBE)	<0.020	ug/L	0.010	<5.6	ppbv	2.8
Methylene Chloride	<0.097	ug/L	0.049	<28	ppbv	14
4-Methyl-2-pentanone (MIBK)	<0.098	ug/L	0.049	<24	ppbv	12
Styrene	<0.020	ug/L	0.0098	<4.6	ppbv	2.3
1,1,2,2-Tetrachloroethane	<0.10	ug/L	0.050	<15	ppbv	7.3
Tetrachloroethylene (PCE)	0.43	ug/L	0.014	63	ppbv	2.0
Toluene	<0.098	ug/L	0.049	<26	ppbv	13
1,2,4-Trichlorobenzene	<0.040	ug/L	0.020	<5.4	ppbv	2.7



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 2
Method: VOCs by GCMS EPA TO-15

AA Project No: A874363
Date Received: 06/26/19
Date Reported: 07/09/19
Sampled: 06/26/19
Prepared: 06/27/19
Analyzed: 06/27/19

SVE-VGACM-062619-0001

9F26010-02 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
1,1,2-Trichloroethane	<0.040	ug/L	0.020	<7.4	ppbv	3.7
1,1,1-Trichloroethane	<0.040	ug/L	0.020	<7.4	ppbv	3.7
Trichloroethylene (TCE)	0.38	ug/L	0.011	71	ppbv	2.0
Trichlorofluoromethane (R11)	<0.10	ug/L	0.050	<18	ppbv	8.9
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.100	ug/L	0.050	<13	ppbv	6.5
1,3,5-Trimethylbenzene	<0.020	ug/L	0.0098	<4.0	ppbv	2.0
1,2,4-Trimethylbenzene	<0.020	ug/L	0.0098	<4.0	ppbv	2.0
Vinyl acetate	<0.020	ug/L	0.0099	<5.6	ppbv	2.8
Vinyl chloride	<0.020	ug/L	0.01	<7.8	ppbv	3.9
o-Xylene	<0.020	ug/L	0.01	<4.6	ppbv	2.3
m,p-Xylenes	<0.020	ug/L	0.01	<4.6	ppbv	2.3
1,2,3-Trichloropropane	<0.024	ug/L	0.012	<4.0	ppbv	2.0
Surrogates		%REC			%REC Limits	
4-Bromofluorobenzene		98.6 %				70-130


Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 2
Method: VOCs by GCMS EPA TO-15

AA Project No: A874363
Date Received: 06/26/19
Date Reported: 07/09/19
Sampled: 06/26/19
Prepared: 06/27/19
Analyzed: 06/27/19

SVE-VGACI-062619-0001

9F26010-03 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
Acetone	<0.100	ug/L	0.050	<42	ppbv	21
Benzene	<0.019	ug/L	0.0096	<6.0	ppbv	3.0
Benzyl chloride	<0.10	ug/L	0.050	<19	ppbv	9.7
Bromodichloromethane	<0.10	ug/L	0.050	<15	ppbv	7.5
Bromoform	<0.099	ug/L	0.050	<9.6	ppbv	4.8
Bromomethane	<0.020	ug/L	0.010	<5.2	ppbv	2.6
2-Butanone (MEK)	<0.10	ug/L	0.050	<34	ppbv	17
Carbon Disulfide	<0.100	ug/L	0.050	<32	ppbv	16
Carbon Tetrachloride	<0.026	ug/L	0.013	<4.2	ppbv	2.1
Chlorobenzene	<0.020	ug/L	0.010	<4.4	ppbv	2.2
Chloroethane	<0.020	ug/L	0.010	<7.6	ppbv	3.8
Chloroform	<0.020	ug/L	0.0098	<4.0	ppbv	2.0
Chloromethane	<0.020	ug/L	0.0099	<9.6	ppbv	4.8
Dibromochloromethane	<0.039	ug/L	0.020	<4.6	ppbv	2.3
1,2-Dibromoethane (EDB)	<0.040	ug/L	0.020	<5.2	ppbv	2.6
1,2-Dichlorobenzene	<0.040	ug/L	0.020	<6.6	ppbv	3.3
1,3-Dichlorobenzene	<0.040	ug/L	0.020	<6.6	ppbv	3.3
1,4-Dichlorobenzene	<0.040	ug/L	0.020	<6.6	ppbv	3.3
Dichlorodifluoromethane (R12)	<0.099	ug/L	0.049	<20	ppbv	10
1,1-Dichloroethane	0.047	ug/L	0.0081	12	ppbv	2.0
1,2-Dichloroethane (EDC)	<0.020	ug/L	0.010	<5.0	ppbv	2.5

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 2
Method: VOCs by GCMS EPA TO-15

AA Project No: A874363
Date Received: 06/26/19
Date Reported: 07/09/19
Sampled: 06/26/19
Prepared: 06/27/19
Analyzed: 06/27/19

SVE-VGACI-062619-0001

9F26010-03 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
cis-1,2-Dichloroethylene	0.21	ug/L	0.0079	52	ppbv	2.0
1,1-Dichloroethylene	0.021	ug/L	0.0079	5.3	ppbv	2.0
trans-1,2-Dichloroethylene	0.020	ug/L	0.0079	5.0	ppbv	2.0
1,2-Dichloropropane	<0.020	ug/L	0.010	<4.4	ppbv	2.2
trans-1,3-Dichloropropylene	<0.020	ug/L	0.01	<4.4	ppbv	2.2
cis-1,3-Dichloropropylene	<0.020	ug/L	0.01	<4.4	ppbv	2.2
Dichlorotetrafluoroethane	<0.10	ug/L	0.050	<14	ppbv	7.2
1,4-Dioxane	<0.020	ug/L	0.010	<5.6	ppbv	2.8
Ethylbenzene	<0.020	ug/L	0.01	<4.6	ppbv	2.3
4-Ethyltoluene	<0.020	ug/L	0.0098	<4.0	ppbv	2.0
Hexachlorobutadiene	<0.10	ug/L	0.050	<9.4	ppbv	4.7
2-Hexanone (MBK)	<0.098	ug/L	0.049	<24	ppbv	12
Isopropanol (IPA)	<0.20	ug/L	0.10	<82	ppbv	41
Methyl-tert-Butyl Ether (MTBE)	<0.020	ug/L	0.010	<5.6	ppbv	2.8
Methylene Chloride	<0.097	ug/L	0.049	<28	ppbv	14
4-Methyl-2-pentanone (MIBK)	<0.098	ug/L	0.049	<24	ppbv	12
Styrene	<0.020	ug/L	0.0098	<4.6	ppbv	2.3
1,1,2,2-Tetrachloroethane	<0.10	ug/L	0.050	<15	ppbv	7.3
Tetrachloroethylene (PCE)	0.91	ug/L	0.014	130	ppbv	2.0
Toluene	<0.098	ug/L	0.049	<26	ppbv	13
1,2,4-Trichlorobenzene	<0.040	ug/L	0.020	<5.4	ppbv	2.7

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 2
Method: VOCs by GCMS EPA TO-15

AA Project No: A874363
Date Received: 06/26/19
Date Reported: 07/09/19
Sampled: 06/26/19
Prepared: 06/27/19
Analyzed: 06/27/19

SVE-VGACI-062619-0001

9F26010-03 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
1,1,2-Trichloroethane	<0.040	ug/L	0.020	<7.4	ppbv	3.7
1,1,1-Trichloroethane	<0.040	ug/L	0.020	<7.4	ppbv	3.7
Trichloroethylene (TCE)	0.40	ug/L	0.011	75	ppbv	2.0
Trichlorofluoromethane (R11)	<0.10	ug/L	0.050	<18	ppbv	8.9
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.100	ug/L	0.050	<13	ppbv	6.5
1,3,5-Trimethylbenzene	<0.020	ug/L	0.0098	<4.0	ppbv	2.0
1,2,4-Trimethylbenzene	<0.020	ug/L	0.0098	<4.0	ppbv	2.0
Vinyl acetate	<0.020	ug/L	0.0099	<5.6	ppbv	2.8
Vinyl chloride	<0.020	ug/L	0.01	<7.8	ppbv	3.9
o-Xylene	<0.020	ug/L	0.01	<4.6	ppbv	2.3
m,p-Xylenes	<0.020	ug/L	0.01	<4.6	ppbv	2.3
1,2,3-Trichloropropane	<0.024	ug/L	0.012	<4.0	ppbv	2.0
Surrogates		%REC			%REC Limits	
4-Bromofluorobenzene		98.9 %				70-130


Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client:	Haley & Aldrich (Oakland)	AA Project No:	A874363
Project No:	130072-024	Date Received:	06/26/19
Project Name:	Cooper Drum - South Gate	Date Reported:	07/09/19
Method:	VOCs by EPA TO-3 GC/MS	Units:	ppbv
Date Sampled:	06/26/19	06/26/19	06/26/19
Date Prepared:	06/27/19	06/27/19	06/27/19
Date Analyzed:	06/27/19	06/27/19	06/27/19
AA ID No:	9F26010-01	9F26010-02	9F26010-03
Client ID No:	SVE-VGACE-062 619-0001	SVE-VGACM-0626 19-0001	SVE-VGACI-062 619-0001
Matrix:	Vapor	Vapor	Vapor
Dilution Factor:	1	1	1
			MRL
<u>TO-3 VOCs as Hexane (TO-3)</u>			
TNMOC as Hexane	<1200	<1200	<1200
			1200
<u>Surrogates</u>		<u>%REC Limits</u>	
4-Bromofluorobenzene	104%	99%	99%
			70-130

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874363
Date Received: 06/26/19
Date Reported: 07/09/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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VOCs by GCMS EPA TO-15 - Quality Control

Batch B9F2723 - *** DEFAULT PREP ***

Blank (B9F2723-BLK1)

Prepared & Analyzed: 06/27/19

Acetone	<21	21	ppbv
Benzene	<3.0	3.0	ppbv
Benzyl chloride	<9.7	9.7	ppbv
Bromodichloromethane	<7.5	7.5	ppbv
Bromoform	<4.8	4.8	ppbv
Bromomethane	<2.6	2.6	ppbv
2-Butanone (MEK)	<17	17	ppbv
Carbon Disulfide	<16	16	ppbv
Carbon Tetrachloride	<2.1	2.1	ppbv
Chlorobenzene	<2.2	2.2	ppbv
Chloroethane	<3.8	3.8	ppbv
Chloroform	<2.0	2.0	ppbv
Chloromethane	<4.8	4.8	ppbv
Dibromochloromethane	<2.3	2.3	ppbv
1,2-Dibromoethane (EDB)	<2.6	2.6	ppbv
1,2-Dichlorobenzene	<3.3	3.3	ppbv
1,3-Dichlorobenzene	<3.3	3.3	ppbv
1,4-Dichlorobenzene	<3.3	3.3	ppbv
Dichlorodifluoromethane (R12)	<10	10	ppbv
1,1-Dichloroethane	<2.0	2.0	ppbv
1,2-Dichloroethane (EDC)	<2.5	2.5	ppbv
cis-1,2-Dichloroethylene	<2.0	2.0	ppbv
1,1-Dichloroethylene	<2.0	2.0	ppbv
trans-1,2-Dichloroethylene	<2.0	2.0	ppbv
1,2-Dichloropropane	<2.2	2.2	ppbv
trans-1,3-Dichloropropylene	<2.2	2.2	ppbv
cis-1,3-Dichloropropylene	<2.2	2.2	ppbv
Dichlorotetrafluoroethane	<7.2	7.2	ppbv
1,4-Dioxane	<2.8	2.8	ppbv
Ethylbenzene	<2.3	2.3	ppbv
4-Ethyltoluene	<2.0	2.0	ppbv
Hexachlorobutadiene	<4.7	4.7	ppbv

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874363
Date Received: 06/26/19
Date Reported: 07/09/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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VOCs by GCMS EPA TO-15 - Quality Control*Batch B9F2723 - *** DEFAULT PREP ******Blank (B9F2723-BLK1) Continued****Prepared & Analyzed: 06/27/19**

2-Hexanone (MBK)	<12	12	ppbv
Isopropanol (IPA)	<41	41	ppbv
Methyl-tert-Butyl Ether (MTBE)	<2.8	2.8	ppbv
Methylene Chloride	<14	14	ppbv
4-Methyl-2-pentanone (MIBK)	<12	12	ppbv
Styrene	<2.3	2.3	ppbv
1,1,2,2-Tetrachloroethane	<7.3	7.3	ppbv
Tetrachloroethylene (PCE)	<2.0	2.0	ppbv
Toluene	<13	13	ppbv
1,2,4-Trichlorobenzene	<2.7	2.7	ppbv
1,1,2-Trichloroethane	<3.7	3.7	ppbv
1,1,1-Trichloroethane	<3.7	3.7	ppbv
Trichloroethylene (TCE)	<2.0	2.0	ppbv
Trichlorofluoromethane (R11)	<8.9	8.9	ppbv
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<6.5	6.5	ppbv
1,3,5-Trimethylbenzene	<2.0	2.0	ppbv
1,2,4-Trimethylbenzene	<2.0	2.0	ppbv
Vinyl acetate	<2.8	2.8	ppbv
Vinyl chloride	<3.9	3.9	ppbv
o-Xylene	<2.3	2.3	ppbv
m,p-Xylenes	<2.3	2.3	ppbv
1,2,3-Trichloropropane	<2.0	2.0	ppbv

Surrogate: 4-Bromofluorobenzene 17.2 ppbv 20 85.8 70-130**LCS (B9F2723-BS1) Prepared & Analyzed: 06/27/19**

Acetone	33.0	21	ppbv	40	82.5	70-130	30
Benzene	36.2	3.0	ppbv	40	90.4	70-130	30
Benzyl chloride	35.7	9.7	ppbv	40	89.2	70-130	30
Bromodichloromethane	35.3	7.5	ppbv	40	88.4	70-130	30
Bromoform	34.8	4.8	ppbv	40	87.0	70-130	30
Bromomethane	41.2	2.6	ppbv	40	103	70-130	30


Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874363
Date Received: 06/26/19
Date Reported: 07/09/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD RPD	RPD Limit	Notes
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VOCs by GCMS EPA TO-15 - Quality Control*Batch B9F2723 - *** DEFAULT PREP ******LCS (B9F2723-BS1) Continued****Prepared & Analyzed: 06/27/19**

2-Butanone (MEK)	37.1	17	ppbv	40	92.8	70-130		30		
Carbon Disulfide	36.5	16	ppbv	40	91.2	70-130		30		
Carbon Tetrachloride	34.9	2.1	ppbv	40	87.2	70-130		30		
Chlorobenzene	34.8	2.2	ppbv	40	86.9	70-130		30		
Chloroethane	41.7	3.8	ppbv	40	104	70-130		30		
Chloroform	36.7	2.0	ppbv	40	91.8	70-130		30		
Chloromethane	42.2	4.8	ppbv	40	106	70-130		30		
Dibromochloromethane	35.3	2.3	ppbv	40	88.3	70-130		30		
1,2-Dibromoethane (EDB)	36.9	2.6	ppbv	40	92.2	70-130		30		
1,2-Dichlorobenzene	34.0	3.3	ppbv	40	84.9	70-130		30		
1,3-Dichlorobenzene	34.4	3.3	ppbv	40	86.1	70-130		30		
1,4-Dichlorobenzene	34.9	3.3	ppbv	40	87.3	70-130		30		
Dichlorodifluoromethane (R12)	37.6	10	ppbv	40	94.0	70-130		30		
1,1-Dichloroethane	36.9	2.0	ppbv	40	92.4	70-130		30		
1,2-Dichloroethane (EDC)	35.5	2.5	ppbv	40	88.6	70-130		30		
cis-1,2-Dichloroethylene	37.5	2.0	ppbv	40	93.7	70-130		30		
1,1-Dichloroethylene	40.3	2.0	ppbv	40	101	70-130		30		
trans-1,2-Dichloroethylene	37.2	2.0	ppbv	40	92.9	70-130		30		
1,2-Dichloropropane	35.9	2.2	ppbv	40	89.8	70-130		30		
trans-1,3-Dichloropropylene	37.9	2.2	ppbv	40	94.6	70-130		30		
cis-1,3-Dichloropropylene	36.2	2.2	ppbv	40	90.6	70-130		30		
Dichlorotetrafluoroethane	39.8	7.2	ppbv	40	99.6	70-130		30		
Ethylbenzene	33.1	2.3	ppbv	40	82.8	70-130		30		
4-Ethyltoluene	31.6	2.0	ppbv	40	78.9	70-130		30		
Hexachlorobutadiene	31.7	4.7	ppbv	40	79.4	70-130		30		
2-Hexanone (MBK)	35.7	12	ppbv	40	89.2	70-130		30		
Isopropanol (IPA)	34.4	41	ppbv	40	86.0	70-130		30		
Methylene Chloride	35.8	14	ppbv	40	89.4	70-130		30		
4-Methyl-2-pentanone (MIBK)	34.0	12	ppbv	40	85.0	70-130		30		
Styrene	36.2	2.3	ppbv	40	90.5	70-130		30		
1,1,2,2-Tetrachloroethane	29.3	7.3	ppbv	40	73.2	70-130		30		
Tetrachloroethylene (PCE)	33.7	2.0	ppbv	40	84.2	70-130		30		

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874363
Date Received: 06/26/19
Date Reported: 07/09/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 - Quality Control										
Batch B9F2723 - *** DEFAULT PREP ***										
LCS (B9F2723-BS1) Continued										
Toluene	35.2	13	ppbv	40	87.9	70-130			30	
1,2,4-Trichlorobenzene	37.5	2.7	ppbv	40	93.8	70-130			30	
1,1,2-Trichloroethane	35.6	3.7	ppbv	40	88.9	70-130			30	
1,1,1-Trichloroethane	35.4	3.7	ppbv	40	88.6	70-130			30	
Trichloroethylene (TCE)	34.0	2.0	ppbv	40	84.9	70-130			30	
Trichlorofluoromethane (R11)	34.1	8.9	ppbv	40	85.2	70-130			30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	37.7	6.5	ppbv	40	94.2	70-130			30	
1,3,5-Trimethylbenzene	30.3	2.0	ppbv	40	75.6	70-130			30	
1,2,4-Trimethylbenzene	33.4	2.0	ppbv	40	83.6	70-130			30	
Vinyl acetate	36.2	2.8	ppbv	40	90.6	70-130			30	
Vinyl chloride	42.5	3.9	ppbv	40	106	70-130			30	
o-Xylene	32.2	2.3	ppbv	40	80.5	70-130			30	
m,p-Xylenes	63.0	2.3	ppbv	80	78.7	70-130			30	
1,2,3-Trichloropropane	32.0	2.0	ppbv	40	79.9	70-130			30	
Surrogate: 4-Bromofluorobenzene	19.8		ppbv	20	99.2	70-130				
LCS Dup (B9F2723-BSD1)										
Prepared & Analyzed: 06/27/19										
Acetone	34.8	21	ppbv	40	87.1	70-130	5.40		30	
Benzene	37.0	3.0	ppbv	40	92.4	70-130	2.24		30	
Benzyl chloride	34.2	9.7	ppbv	40	85.5	70-130	4.24		30	
Bromodichloromethane	36.5	7.5	ppbv	40	91.2	70-130	3.17		30	
Bromoform	35.2	4.8	ppbv	40	88.0	70-130	1.06		30	
Bromomethane	45.4	2.6	ppbv	40	114	70-130	9.82		30	
2-Butanone (MEK)	36.1	17	ppbv	40	90.2	70-130	2.90		30	
Carbon Disulfide	37.8	16	ppbv	40	94.4	70-130	3.42		30	
Carbon Tetrachloride	36.1	2.1	ppbv	40	90.2	70-130	3.47		30	
Chlorobenzene	35.7	2.2	ppbv	40	89.2	70-130	2.67		30	
Chloroethane	47.8	3.8	ppbv	40	120	70-130	13.6		30	
Chloroform	37.3	2.0	ppbv	40	93.2	70-130	1.62		30	
Chloromethane	45.3	4.8	ppbv	40	113	70-130	6.99		30	
Dibromochloromethane	36.6	2.3	ppbv	40	91.5	70-130	3.56		30	

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874363
Date Received: 06/26/19
Date Reported: 07/09/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD RPD	RPD Limit	Notes
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VOCs by GCMS EPA TO-15 - Quality Control

Batch B9F2723 - *** DEFAULT PREP ***

LCS Dup (B9F2723-BSD1) Continued

Prepared & Analyzed: 06/27/19

1,2-Dibromoethane (EDB)	37.7	2.6	ppbv	40	94.2	70-130	2.23	30
1,2-Dichlorobenzene	33.8	3.3	ppbv	40	84.5	70-130	0.502	30
1,3-Dichlorobenzene	35.0	3.3	ppbv	40	87.4	70-130	1.47	30
1,4-Dichlorobenzene	34.6	3.3	ppbv	40	86.5	70-130	0.892	30
Dichlorodifluoromethane (R12)	38.6	10	ppbv	40	96.6	70-130	2.75	30
1,1-Dichloroethane	34.9	2.0	ppbv	40	87.2	70-130	5.79	30
1,2-Dichloroethane (EDC)	36.2	2.5	ppbv	40	90.6	70-130	2.12	30
cis-1,2-Dichloroethylene	38.6	2.0	ppbv	40	96.4	70-130	2.87	30
1,1-Dichloroethylene	42.4	2.0	ppbv	40	106	70-130	5.06	30
trans-1,2-Dichloroethylene	38.6	2.0	ppbv	40	96.6	70-130	3.88	30
1,2-Dichloropropane	37.0	2.2	ppbv	40	92.5	70-130	2.99	30
trans-1,3-Dichloropropylene	38.4	2.2	ppbv	40	96.1	70-130	1.55	30
cis-1,3-Dichloropropylene	37.3	2.2	ppbv	40	93.2	70-130	2.94	30
Dichlorotetrafluoroethane	42.2	7.2	ppbv	40	105	70-130	5.66	30
Ethylbenzene	33.6	2.3	ppbv	40	84.0	70-130	1.56	30
4-Ethyltoluene	32.0	2.0	ppbv	40	80.0	70-130	1.48	30
Hexachlorobutadiene	30.4	4.7	ppbv	40	76.1	70-130	4.15	30
2-Hexanone (MBK)	35.0	12	ppbv	40	87.4	70-130	2.07	30
Isopropanol (IPA)	35.2	41	ppbv	40	88.1	70-130	2.41	30
Methylene Chloride	36.3	14	ppbv	40	90.7	70-130	1.44	30
4-Methyl-2-pentanone (MIBK)	33.3	12	ppbv	40	83.2	70-130	2.05	30
Styrene	36.3	2.3	ppbv	40	90.8	70-130	0.276	30
1,1,2,2-Tetrachloroethane	29.5	7.3	ppbv	40	73.7	70-130	0.715	30
Tetrachloroethylene (PCE)	35.0	2.0	ppbv	40	87.6	70-130	3.96	30
Toluene	35.8	13	ppbv	40	89.6	70-130	1.94	30
1,2,4-Trichlorobenzene	34.4	2.7	ppbv	40	86.0	70-130	8.73	30
1,1,2-Trichloroethane	36.6	3.7	ppbv	40	91.5	70-130	2.85	30
1,1,1-Trichloroethane	36.0	3.7	ppbv	40	90.0	70-130	1.60	30
Trichloroethylene (TCE)	36.0	2.0	ppbv	40	90.0	70-130	5.86	30
Trichlorofluoromethane (R11)	36.7	8.9	ppbv	40	91.7	70-130	7.35	30
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	39.1	6.5	ppbv	40	97.7	70-130	3.62	30

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874363
Date Received: 06/26/19
Date Reported: 07/09/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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VOCs by GCMS EPA TO-15 - Quality Control*Batch B9F2723 - *** DEFAULT PREP ******LCS Dup (B9F2723-BSD1) Continued****Prepared & Analyzed: 06/27/19**

1,3,5-Trimethylbenzene	31.8	2.0	ppbv	40	79.6	70-130	5.12	30
1,2,4-Trimethylbenzene	33.4	2.0	ppbv	40	83.6	70-130	0.0299	30
Vinyl acetate	36.9	2.8	ppbv	40	92.2	70-130	1.75	30
Vinyl chloride	45.0	3.9	ppbv	40	113	70-130	5.74	30
o-Xylene	32.6	2.3	ppbv	40	81.4	70-130	1.05	30
m,p-Xylenes	63.9	2.3	ppbv	80	79.9	70-130	1.50	30
1,2,3-Trichloropropane	32.5	2.0	ppbv	40	81.2	70-130	1.58	30

Surrogate: 4-Bromofluorobenzene**20.2 ppbv 20 101 70-130****Duplicate (B9F2723-DUP1)****Source: 9F26010-02 Prepared & Analyzed: 06/27/19**

Acetone	<42	42	ppbv	<42				30
Benzene	<6.0	6.0	ppbv	<6.0				30
Benzyl chloride	<19	19	ppbv	<19				30
Bromodichloromethane	<15	15	ppbv	<15				30
Bromoform	<9.6	9.6	ppbv	<9.6				30
Bromomethane	<5.2	5.2	ppbv	<5.2				30
2-Butanone (MEK)	<34	34	ppbv	<34				30
Carbon Disulfide	<32	32	ppbv	<32				30
Carbon Tetrachloride	<4.2	4.2	ppbv	<4.2				30
Chlorobenzene	<4.4	4.4	ppbv	<4.4				30
Chloroethane	<7.6	7.6	ppbv	<7.6				30
Chloroform	<4.0	4.0	ppbv	<4.0				30
Chloromethane	<9.6	9.6	ppbv	<9.6				30
Dibromochloromethane	<4.6	4.6	ppbv	<4.6				30
1,2-Dibromoethane (EDB)	<5.2	5.2	ppbv	<5.2				30
1,2-Dichlorobenzene	<6.6	6.6	ppbv	<6.6				30
1,3-Dichlorobenzene	<6.6	6.6	ppbv	<6.6				30
1,4-Dichlorobenzene	<6.6	6.6	ppbv	<6.6				30
Dichlorodifluoromethane (R12)	<20	20	ppbv	<20				30
1,1-Dichloroethane	12.5	4.0	ppbv	12.6			0.794	30
1,2-Dichloroethane (EDC)	<5.0	5.0	ppbv	<5.0				30
cis-1,2-Dichloroethylene	53.8	4.0	ppbv	53.2			1.23	30

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874363
Date Received: 06/26/19
Date Reported: 07/09/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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VOCs by GCMS EPA TO-15 - Quality Control*Batch B9F2723 - *** DEFAULT PREP ******Duplicate (B9F2723-DUP1) Continued Source: 9F26010-02 Prepared & Analyzed: 06/27/19**

1,1-Dichloroethylene	5.90	4.0	ppbv		5.54			6.29	30	
trans-1,2-Dichloroethylene	5.56	4.0	ppbv		5.64			1.43	30	
1,2-Dichloropropane	<4.4	4.4	ppbv		<4.4				30	
trans-1,3-Dichloropropylene	<4.4	4.4	ppbv		<4.4				30	
cis-1,3-Dichloropropylene	<4.4	4.4	ppbv		<4.4				30	
Dichlorotetrafluoroethane	<14	14	ppbv		<14				30	
1,4-Dioxane	<5.6	5.6	ppbv		<5.6				30	
Ethylbenzene	<4.6	4.6	ppbv		<4.6				30	
4-Ethyltoluene	<4.0	4.0	ppbv		<4.0				30	
Hexachlorobutadiene	<9.4	9.4	ppbv		<9.4				30	
2-Hexanone (MBK)	<24	24	ppbv		<24				30	
Isopropanol (IPA)	<82	82	ppbv		<82				30	
Methyl-tert-Butyl Ether (MTBE)	<5.6	5.6	ppbv		<5.6				30	
Methylene Chloride	<28	28	ppbv		<28				30	
4-Methyl-2-pentanone (MIBK)	<24	24	ppbv		<24				30	
Styrene	<4.6	4.6	ppbv		<4.6				30	
1,1,2,2-Tetrachloroethane	<15	15	ppbv		<15				30	
Tetrachloroethylene (PCE)	63.8	4.0	ppbv		63.3			0.692	30	
Toluene	<26	26	ppbv		<26				30	
1,2,4-Trichlorobenzene	<5.4	5.4	ppbv		<5.4				30	
1,1,2-Trichloroethane	<7.4	7.4	ppbv		<7.4				30	
1,1,1-Trichloroethane	<7.4	7.4	ppbv		<7.4				30	
Trichloroethylene (TCE)	72.1	4.0	ppbv		71.0			1.62	30	
Trichlorofluoromethane (R11)	<18	18	ppbv		<18				30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<13	13	ppbv		<13				30	
1,3,5-Trimethylbenzene	<4.0	4.0	ppbv		<4.0				30	
1,2,4-Trimethylbenzene	<4.0	4.0	ppbv		<4.0				30	
Vinyl acetate	<5.6	5.6	ppbv		<5.6				30	
Vinyl chloride	<7.8	7.8	ppbv		<7.8				30	
o-Xylene	<4.6	4.6	ppbv		<4.6				30	
m,p-Xylenes	<4.6	4.6	ppbv		<4.6				30	

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874363
Date Received: 06/26/19
Date Reported: 07/09/19

Analyte	Reporting			Spike	Source	%REC	RPD Limit	Notes
	Result	Limit	Units	Level	Result	%REC		

VOCs by GCMS EPA TO-15 - Quality Control

Batch B9F2723 - *** DEFAULT PREP ***

Duplicate (B9F2723-DUP1) Continued Source: 9F26010-02 Prepared & Analyzed: 06/27/1998

1,2,3-Trichloropropane <4.0 4.0 ppbv <4.0 30

Surrogate: 4-Bromofluorobenzene 20.3 ppbv 20 101 70-130

VOCs by EPA TO-3 GC/MS - Quality Control

Batch B9F2724 - *** DEFAULT PREP ***

Blank (B9F2724-BLK1) Prepared & Analyzed: 06/27/19

TNMC as Hexane <1200 1200 ppbv

Surrogate: 4-Bromofluorobenzene 4.27 *ppbv* 5.0 85.4 70-130

LCS (B9F2724-BS1) Prepared & Analyzed: 06/27/19

GRO as Hexane 216 1200 ppbv 200 108 70-130 30

Surrogate: 4-Bromofluorobenzene 4.53 ppbv 5.0 90.6 70-130
 100.5 (100.4-100.6)

LCS Dup (B9F27/24-BSD1) Prepared & Analyzed: 06/28/19

GRO as Hexane **212** **1200** **ppbv** **200** **100** **70-130**

Surrogate: 4-Bromofluorobenzene 4.01 ppbv 5.0 92.2 70-130
 Duplicate: (PE50721-BUR1) 6 5E2021-02_Bromo-1,3_Aneole_L-02/07/12

Source: 9F28010-02 Prepared & Analyzed: 08/27/19

GROM as Hexane <1200 1200 ppby 807 5.48 30

[Signature]

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874363
Date Received: 06/26/19
Date Reported: 07/09/19

Special Notes

Viorel Vasile
Operations Manager



AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311

Tel: 818-998-5547 FAX: 818-998-7258

A.A. COC No.: 19425

70049648

Page 1 of 1

Client: Hailey + Aldrich : JHA Environmental, Inc. Project Name / No.: Cooper Drum

Sampler's Name: Alex Felix

Project Manager: Chris Battaglia / Maint: Hillman

Project Manager: Chris Latties / Host: Hallmark

Phone: 714-371-7820 / 714-392-5970

Fax:

State & Zip:

Quote No.:

TAT Turnaround Codes **

- | | |
|---|--|
| 1 = Same Day Rush
2 = 24 Hour Rush
3 = 48 Hour Rush | 4 = 72 Hour Rush
5 = 5 Day Rush
X = 10 Working Days (Standard TAT) |
|---|--|

ANALYSIS REQUESTED (Test Name)

Note: By relinquishing samples to American Analytics, client agrees to the terms of the Sample Release Agreement.

Note: By relinquishing samples to American Analytics, client agrees to pay for the services requested on this chain of custody form and any additional client-requested analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 45 days following the submittal of the sample(s) to American Analytics.

ATTACHMENT B

Groundwater Treatment System Laboratory Analytical Report



9765 Eton Avenue
Chatsworth
California 91311
Tel: (818) 998-5547
Fax: (818) 998-7258

June 27, 2019

Peter Bennett
Haley & Aldrich (Oakland)
1956 Webster St., Suite 450
Oakland, CA 94612

Re : Cooper Drum - South Gate / 130072-024
A874355 / 9F12014

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received on 06/12/19 16:17 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Program Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report or require additional information please call me at American Analytics.

Sincerely,

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874355
Date Received: 06/12/19
Date Reported: 06/27/19

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
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8260B

EW-INF-061219-0001	9F12014-01	Water	5	06/12/19 10:50	06/12/19 16:17
TOTAL-EFF-061219-0001	9F12014-02	Water	5	06/12/19 10:40	06/12/19 16:17

8270CM 1,4-Dioxane Only

EW-INF-061219-0001	9F12014-01	Water	5	06/12/19 10:50	06/12/19 16:17
TOTAL-EFF-061219-0001	9F12014-02	Water	5	06/12/19 10:40	06/12/19 16:17



Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Method: EPA 8270CM 1,4-Dioxane

AA Project No: A874355
Date Received: 06/12/19
Date Reported: 06/27/19

AA I.D. No.	Client I.D. No.	Sampled	Prepared	Analyzed	Dilution	Result	Units	MDL	MRL
<u>8270CM 1,4-Dioxane Only (EPA 8270CM)</u>									
9F12014-01	EW-INF-061219-00 01	06/12/19	06/17/19	06/18/19	1	8.4	ug/L	1	2
9F12014-02	TOTAL-EFF-06121 9-0001	06/12/19	06/17/19	06/18/19	1	8.6	ug/L	1	2



Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Method: VOCs by GC/MS

AA Project No: A874355
Date Received: 06/12/19
Date Reported: 06/27/19
Units: ug/L

Date Sampled:	06/12/19	06/12/19		
Date Prepared:	06/20/19	06/20/19		
Date Analyzed:	06/20/19	06/20/19		
AA ID No:	9F12014-01	9F12014-02		
Client ID No:	EW-INF-061219-	TOTAL-EFF-06121		
	0001	9-0001		
Matrix:	Water	Water		
Dilution Factor:	1	1	MDL	MRL

8260B (EPA 8260B)

Acetone	<7.7	<7.7	7.7	50
Benzene	1.2	0.89	0.40	0.50
Bromobenzene	<0.30	<0.30	0.40	0.50
Bromochloromethane	<0.50	<0.50	0.20	0.50
Bromodichloromethane	<0.20	<0.20	0.40	0.50
Bromoform	<0.50	<0.50	0.40	0.50
Bromomethane	<0.50	<0.50	0.30	0.50
2-Butanone (MEK)	<2.0	<2.0	8.6	20
tert-Butylbenzene	<0.20	<0.20	0.20	0.50
n-Butylbenzene	<0.20	<0.20	0.20	0.50
sec-Butylbenzene	<0.20	<0.20	0.20	0.50
Carbon Disulfide	<0.30	<0.30	0.20	0.50
Carbon Tetrachloride	<0.30	<0.30	0.30	0.50
Chlorobenzene	<0.30	<0.30	0.40	0.50
Chloroethane	<0.50	<0.50	0.40	0.50
Chloroform	<0.30	<0.30	0.30	0.50
Chloromethane	<0.40	<0.40	0.40	0.50
4-Chlorotoluene	<0.20	<0.20	0.20	0.50
2-Chlorotoluene	<0.30	<0.30	0.20	0.50
1,2-Dibromo-3-chloropropane	<0.40	<0.40	0.40	1.0
Dibromochloromethane	<0.30	<0.30	0.40	0.50
1,2-Dibromoethane (EDB)	<0.30	<0.30	0.40	0.50
Dibromomethane	<0.40	<0.40	0.40	0.50
1,3-Dichlorobenzene	<0.10	<0.10	0.40	0.50
1,4-Dichlorobenzene	<0.30	<0.30	0.30	0.50
1,2-Dichlorobenzene	<0.30	<0.30	0.30	0.50

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Method: VOCs by GC/MS

AA Project No: A874355
Date Received: 06/12/19
Date Reported: 06/27/19
Units: ug/L

Date Sampled:	06/12/19	06/12/19		
Date Prepared:	06/20/19	06/20/19		
Date Analyzed:	06/20/19	06/20/19		
AA ID No:	9F12014-01	9F12014-02		
Client ID No:	EW-INF-061219-	TOTAL-EFF-06121		
	0001	9-0001		
Matrix:	Water	Water		
Dilution Factor:	1	1	MDL	MRL

8260B (EPA 8260B) (continued)

Dichlorodifluoromethane (R12)	<0.50	<0.50	0.40	0.50
1,1-Dichloroethane	2.0	1.9	0.20	0.50
1,2-Dichloroethane (EDC)	1.4	1.4	0.20	0.50
cis-1,2-Dichloroethylene	35	32	0.30	0.50
1,1-Dichloroethylene	0.98	0.79	0.40	0.50
trans-1,2-Dichloroethylene	5.0	3.7	0.30	0.50
1,3-Dichloropropane	<0.10	<0.10	0.40	0.50
1,2-Dichloropropane	<0.50	<0.50	0.30	0.50
2,2-Dichloropropane	<0.40	<0.40	0.30	0.50
trans-1,3-Dichloropropylene	<0.20	<0.20	0.30	0.50
1,1-Dichloropropylene	<0.20	<0.20	0.30	0.50
cis-1,3-Dichloropropylene	<0.20	<0.20	0.40	0.50
Ethylbenzene	<0.20	<0.20	0.30	0.50
Hexachlorobutadiene	<0.40	<0.40	0.50	1.0
2-Hexanone (MBK)	<2.0	<2.0	8.4	20
Isopropylbenzene	<0.20	<0.20	0.30	0.50
4-Isopropyltoluene	<0.20	<0.20	0.30	1.0
Methyl-tert-Butyl Ether (MTBE)	<1.7	<1.7	1.4	2.0
Methylene Chloride	<5.0	<5.0	4.4	5.0
4-Methyl-2-pentanone (MIBK)	<0.70	<0.70	9.8	20
Naphthalene	<0.20	<0.20	0.40	2.0
n-Propylbenzene	<0.20	<0.20	0.20	0.50
Styrene	<0.20	<0.20	0.20	0.50
1,1,1,2-Tetrachloroethane	<0.40	<0.40	0.30	0.50
1,1,2,2-Tetrachloroethane	<0.30	<0.30	0.40	0.50
Tetrachloroethylene (PCE)	<0.50	<0.50	0.50	0.50

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Method: VOCs by GC/MS

AA Project No: A874355
Date Received: 06/12/19
Date Reported: 06/27/19
Units: ug/L

Date Sampled:	06/12/19	06/12/19		
Date Prepared:	06/20/19	06/20/19		
Date Analyzed:	06/20/19	06/20/19		
AA ID No:	9F12014-01	9F12014-02		
Client ID No:	EW-INF-061219-	TOTAL-EFF-06121		
	0001	9-0001		
Matrix:	Water	Water		
Dilution Factor:	1	1	MDL	MRL

8260B (EPA 8260B) (continued)

Toluene	<0.30	<0.30	0.20	0.50
1,2,4-Trichlorobenzene	<0.20	<0.20	0.30	0.50
1,2,3-Trichlorobenzene	<0.20	<0.20	0.50	0.50
1,1,2-Trichloroethane	<0.30	<0.30	0.30	0.50
1,1,1-Trichloroethane	<0.30	<0.30	0.30	0.50
Trichloroethylene (TCE)	1.8	1.6	0.30	0.50
Trichlorofluoromethane (R11)	<0.20	<0.20	0.40	0.50
1,2,3-Trichloropropane	<0.30	<0.30	0.20	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.30	<0.30	0.30	0.50
1,2,4-Trimethylbenzene	<0.30	<0.30	0.30	0.50
1,3,5-Trimethylbenzene	<0.20	<0.20	0.20	0.50
Vinyl chloride	0.79	0.51	0.40	0.50
o-Xylene	<0.30	<0.30	0.30	0.50
m,p-Xylenes	<0.40	<0.40	0.60	1.0

Surrogates			%REC Limits
4-Bromofluorobenzene	98%	98%	80-129
Dibromofluoromethane	102%	106%	68-137
Toluene-d8	95%	96%	83-134

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874355
Date Received: 06/12/19
Date Reported: 06/27/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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EPA 8270CM 1,4-Dioxane - Quality Control

Batch B9F1710 - EPA 3510C_MS

Blank (B9F1710-BLK1)		Prepared: 06/17/19 Analyzed: 06/18/19								
1,4-Dioxane	<1.0	1.0	ug/L							
LCS (B9F1710-BS1)		Prepared: 06/17/19 Analyzed: 06/18/19								
1,4-Dioxane	8.90	1.0	ug/L	10	89.0	75-125				
LCS Dup (B9F1710-BSD1)		Prepared: 06/17/19 Analyzed: 06/18/19								
1,4-Dioxane	10.0	1.0	ug/L	10	100	75-125	12.1	30		
Matrix Spike (B9F1710-MS1)		Source: 9F12012-04 Prepared: 06/17/19 Analyzed: 06/18/19								
1,4-Dioxane	29.1	1.0	ug/L	10	20.0	90.6	70-130			
Matrix Spike Dup (B9F1710-MSD1)		Source: 9F12012-04 Prepared: 06/17/19 Analyzed: 06/18/19								
1,4-Dioxane	31.1	1.0	ug/L	10	20.0	111	70-130	6.78	30	

VOCs by GC/MS - Quality Control

Batch B9F2004 - EPA 5030B

Blank (B9F2004-BLK1)		Prepared & Analyzed: 06/20/19								
Acetone	<7.7	7.7	ug/L							
Benzene	<0.20	0.20	ug/L							
Bromobenzene	<0.30	0.30	ug/L							
Bromoform	<0.50	0.50	ug/L							
Bromochloromethane	<0.20	0.20	ug/L							
Bromodichloromethane	<0.20	0.20	ug/L							
Bromomethane	<0.50	0.50	ug/L							
2-Butanone (MEK)	<2.0	2.0	ug/L							
Chloroethane	<0.20	0.20	ug/L							
Chloroform	<0.50	0.50	ug/L							
Chloromethane	<0.30	0.30	ug/L							
4-Chlorotoluene	<0.20	0.20	ug/L							

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874355
Date Received: 06/12/19
Date Reported: 06/27/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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VOCs by GC/MS - Quality Control*Batch B9F2004 - EPA 5030B***Blank (B9F2004-BLK1) Continued***Prepared & Analyzed: 06/20/19*

2-Chlorotoluene	<0.30	0.30	ug/L
1,2-Dibromo-3-chloropropane	<0.40	0.40	ug/L
Dibromochloromethane	<0.30	0.30	ug/L
1,2-Dibromoethane (EDB)	<0.30	0.30	ug/L
Dibromomethane	<0.40	0.40	ug/L
1,3-Dichlorobenzene	<0.10	0.10	ug/L
1,4-Dichlorobenzene	<0.30	0.30	ug/L
1,2-Dichlorobenzene	<0.30	0.30	ug/L
Dichlorodifluoromethane (R12)	<0.50	0.50	ug/L
1,1-Dichloroethane	<0.20	0.20	ug/L
1,2-Dichloroethane (EDC)	<0.30	0.30	ug/L
cis-1,2-Dichloroethylene	<0.20	0.20	ug/L
1,1-Dichloroethylene	<0.30	0.30	ug/L
trans-1,2-Dichloroethylene	<0.40	0.40	ug/L
1,3-Dichloropropane	<0.10	0.10	ug/L
1,2-Dichloropropane	<0.50	0.50	ug/L
2,2-Dichloropropane	<0.40	0.40	ug/L
trans-1,3-Dichloropropylene	<0.20	0.20	ug/L
1,1-Dichloropropylene	<0.20	0.20	ug/L
cis-1,3-Dichloropropylene	<0.20	0.20	ug/L
Ethylbenzene	<0.20	0.20	ug/L
Hexachlorobutadiene	<0.40	0.40	ug/L
2-Hexanone (MBK)	<2.0	2.0	ug/L
Isopropylbenzene	<0.20	0.20	ug/L
4-Isopropyltoluene	<0.20	0.20	ug/L
Methyl-tert-Butyl Ether (MTBE)	<1.7	1.7	ug/L
Methylene Chloride	<5.0	5.0	ug/L
4-Methyl-2-pentanone (MIBK)	<0.70	0.70	ug/L
Naphthalene	<0.20	0.20	ug/L
n-Propylbenzene	<0.20	0.20	ug/L
Styrene	<0.20	0.20	ug/L
1,1,1,2-Tetrachloroethane	<0.40	0.40	ug/L

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874355
Date Received: 06/12/19
Date Reported: 06/27/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
VOCs by GC/MS - Quality Control										
Batch B9F2004 - EPA 5030B										
Blank (B9F2004-BLK1) Continued										
Prepared & Analyzed: 06/20/19										
1,1,2,2-Tetrachloroethane	<0.30	0.30	ug/L							
Tetrachloroethylene (PCE)	<0.50	0.50	ug/L							
Toluene	<0.30	0.30	ug/L							
1,2,4-Trichlorobenzene	<0.20	0.20	ug/L							
1,2,3-Trichlorobenzene	<0.20	0.20	ug/L							
1,1,2-Trichloroethane	<0.30	0.30	ug/L							
1,1,1-Trichloroethane	<0.30	0.30	ug/L							
Trichloroethylene (TCE)	<0.20	0.20	ug/L							
Trichlorofluoromethane (R11)	<0.20	0.20	ug/L							
1,2,3-Trichloropropane	<0.30	0.30	ug/L							
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.30	0.30	ug/L							
1,2,4-Trimethylbenzene	<0.30	0.30	ug/L							
1,3,5-Trimethylbenzene	<0.20	0.20	ug/L							
Vinyl chloride	<0.50	0.50	ug/L							
o-Xylene	<0.30	0.30	ug/L							
m,p-Xylenes	<0.40	0.40	ug/L							
Surrogate: 4-Bromofluorobenzene	48.5		ug/L	50		97.0	80-129			
Surrogate: Dibromofluoromethane	49.4		ug/L	50		98.7	68-137			
Surrogate: Toluene-d8	48.5		ug/L	50		97.0	83-134			
LCS (B9F2004-BS1)										
Prepared & Analyzed: 06/20/19										
Acetone	17.9	7.7	ug/L	20		89.3	27-123			J
Benzene	18.8	0.20	ug/L	20		93.8	60-134			
Bromobenzene	20.3	0.30	ug/L	20		102	70-130			
Bromochloromethane	20.8	0.50	ug/L	20		104	78-121			
Bromodichloromethane	22.4	0.20	ug/L	20		112	74-135			
Bromoform	19.2	0.50	ug/L	20		96.0	68-132			
Bromomethane	19.9	0.50	ug/L	20		99.3	58-142			
2-Butanone (MEK)	18.0	2.0	ug/L	20		90.0	62-138			J
tert-Butylbenzene	21.0	0.20	ug/L	20		105	70-130			
n-Butylbenzene	21.8	0.20	ug/L	20		109	70-130			

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874355
Date Received: 06/12/19
Date Reported: 06/27/19

Analyte	Reporting Result	Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD RPD	RPD Limit	Notes
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VOCs by GC/MS - Quality Control

Batch B9F2004 - EPA 5030B

LCS (B9F2004-BS1) Continued

Prepared & Analyzed: 06/20/19

sec-Butylbenzene	21.3	0.20	ug/L	20		107	84-142			
Carbon Disulfide	21.6	0.30	ug/L	20		108	17-177			
Carbon Tetrachloride	22.2	0.30	ug/L	20		111	66-155			
Chlorobenzene	20.6	0.30	ug/L	20		103	70-130			
Chloroethane	22.7	0.50	ug/L	20		113	45-166			
Chloroform	21.5	0.30	ug/L	20		107	71-131			
Chloromethane	22.5	0.40	ug/L	20		112	48-152			
4-Chlorotoluene	21.3	0.20	ug/L	20		106	70-130			
2-Chlorotoluene	21.1	0.30	ug/L	20		106	70-130			
1,2-Dibromo-3-chloropropane	21.3	0.40	ug/L	20		106	53-145			
Dibromochloromethane	21.1	0.30	ug/L	20		105	72-133			
1,2-Dibromoethane (EDB)	21.2	0.30	ug/L	20		106	79-120			
Dibromomethane	21.0	0.40	ug/L	20		105	68-124			
1,3-Dichlorobenzene	20.4	0.10	ug/L	20		102	70-130			
1,4-Dichlorobenzene	19.9	0.30	ug/L	20		99.4	70-130			
1,2-Dichlorobenzene	20.9	0.30	ug/L	20		105	70-130			
Dichlorodifluoromethane (R12)	21.1	0.50	ug/L	20		106	16-148			
1,1-Dichloroethane	21.3	0.20	ug/L	20		107	67-120			
1,2-Dichloroethane (EDC)	23.1	0.30	ug/L	20		115	57-156			
cis-1,2-Dichloroethylene	21.0	0.20	ug/L	20		105	70-124			
1,1-Dichloroethylene	21.2	0.30	ug/L	20		106	50-149			
trans-1,2-Dichloroethylene	21.4	0.40	ug/L	20		107	66-126			
1,3-Dichloropropane	21.0	0.10	ug/L	20		105	79-113			
1,2-Dichloropropane	21.6	0.50	ug/L	20		108	53-139			
2,2-Dichloropropane	21.2	0.40	ug/L	20		106	44-162			
trans-1,3-Dichloropropylene	21.8	0.20	ug/L	20		109	76-121			
1,1-Dichloropropylene	21.9	0.20	ug/L	20		109	84-124			
cis-1,3-Dichloropropylene	21.8	0.20	ug/L	20		109	67-127			
Ethylbenzene	21.4	0.20	ug/L	20		107	86-124			
Hexachlorobutadiene	19.6	0.40	ug/L	20		97.8	76-140			
2-Hexanone (MBK)	20.3	2.0	ug/L	20		102	52-123			
Isopropylbenzene	21.6	0.20	ug/L	20		108	70-130			

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874355
Date Received: 06/12/19
Date Reported: 06/27/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD RPD	RPD Limit	Notes
VOCs by GC/MS - Quality Control										
<i>Batch B9F2004 - EPA 5030B</i>										
LCS (B9F2004-BS1) Continued										
					Prepared & Analyzed: 06/20/19					
4-Isopropyltoluene	21.3	0.20	ug/L	20		107	70-130			
Methyl-tert-Butyl Ether (MTBE)	41.7	1.7	ug/L	40		104	58-144			
Methylene Chloride	20.4	5.0	ug/L	20		102	50-135			
4-Methyl-2-pentanone (MIBK)	19.2	0.70	ug/L	20		96.1	49-139			J
Naphthalene	21.0	0.20	ug/L	20		105	74-128			
n-Propylbenzene	21.8	0.20	ug/L	20		109	70-130			
Styrene	21.1	0.20	ug/L	20		106	84-123			
1,1,1,2-Tetrachloroethane	20.6	0.40	ug/L	20		103	70-130			
1,1,2,2-Tetrachloroethane	22.4	0.30	ug/L	20		112	58-126			
Tetrachloroethylene (PCE)	20.1	0.50	ug/L	20		100	70-130			
Toluene	20.8	0.30	ug/L	20		104	83-118			
1,2,4-Trichlorobenzene	20.1	0.20	ug/L	20		101	84-128			
1,2,3-Trichlorobenzene	19.5	0.20	ug/L	20		97.6	77-134			
1,1,2-Trichloroethane	21.4	0.30	ug/L	20		107	75-115			
1,1,1-Trichloroethane	22.2	0.30	ug/L	20		111	66-158			
Trichloroethylene (TCE)	21.1	0.20	ug/L	20		105	82-128			
Trichlorofluoromethane (R11)	18.9	0.20	ug/L	20		94.4	65-137			
1,2,3-Trichloropropane	22.0	0.30	ug/L	20		110	68-123			
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	16.0	0.30	ug/L	20		80.0	62-130			
1,2,4-Trimethylbenzene	21.3	0.30	ug/L	20		106	70-130			
1,3,5-Trimethylbenzene	21.5	0.20	ug/L	20		108	70-130			
Vinyl chloride	23.2	0.50	ug/L	20		116	51-151			
o-Xylene	21.5	0.30	ug/L	20		108	70-130			
m,p-Xylenes	42.9	0.40	ug/L	40		107	70-130			
Surrogate: 4-Bromofluorobenzene	48.5		ug/L	50		97.1	80-129			
Surrogate: Dibromofluoromethane	48.9		ug/L	50		97.8	68-137			
Surrogate: Toluene-d8	48.3		ug/L	50		96.7	83-134			
LCS Dup (B9F2004-BSD1)										
					Prepared & Analyzed: 06/20/19					
Acetone	19.1	7.7	ug/L	20		95.6	27-123	6.76	30	
Benzene	19.4	0.20	ug/L	20		96.8	60-134	3.15	30	J

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874355
Date Received: 06/12/19
Date Reported: 06/27/19

Analyte	Reporting Result	Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD RPD	Limit Notes
VOCs by GC/MS - Quality Control									
Batch B9F2004 - EPA 5030B									
LCS Dup (B9F2004-BSD1) Continued									
Bromobenzene	19.5	0.30	ug/L	20	97.6	70-130	4.02	30	
Bromoform	19.5	0.50	ug/L	20	97.4	68-132	1.55	30	
Bromochloromethane	22.3	0.50	ug/L	20	112	78-121	6.90	30	
Bromodichloromethane	23.1	0.20	ug/L	20	115	74-135	3.12	30	
Bromoform	17.0	0.50	ug/L	20	84.8	58-142	15.7	30	
Bromomethane	20.4	2.0	ug/L	20	102	62-138	12.6	30	
2-Butanone (MEK)	20.8	0.20	ug/L	20	104	70-130	1.24	30	
tert-Butylbenzene	20.7	0.20	ug/L	20	104	70-130	5.26	30	
n-Butylbenzene	20.8	0.20	ug/L	20	104	84-142	2.51	30	
sec-Butylbenzene	21.5	0.30	ug/L	20	108	17-177	0.279	30	
Carbon Disulfide	23.1	0.30	ug/L	20	116	66-155	4.24	30	
Carbon Tetrachloride	20.2	0.30	ug/L	20	101	70-130	2.01	30	
Chlorobenzene	47.9	0.50	ug/L	20	239	45-166	71.4	30	**, AA-C1
Chloroform	22.6	0.30	ug/L	20	113	71-131	5.17	30	
Chloromethane	22.4	0.40	ug/L	20	112	48-152	0.401	30	
4-Chlorotoluene	20.5	0.20	ug/L	20	103	70-130	3.78	30	
2-Chlorotoluene	20.3	0.30	ug/L	20	102	70-130	3.91	30	
1,2-Dibromo-3-chloropropane	21.1	0.40	ug/L	20	105	53-145	0.850	30	
Dibromochloromethane	21.2	0.30	ug/L	20	106	72-133	0.615	30	
1,2-Dibromoethane (EDB)	21.3	0.30	ug/L	20	106	79-120	0.329	30	
Dibromomethane	21.9	0.40	ug/L	20	110	68-124	4.33	30	
1,3-Dichlorobenzene	19.4	0.10	ug/L	20	97.2	70-130	4.52	30	
1,4-Dichlorobenzene	19.6	0.30	ug/L	20	98.2	70-130	1.27	30	
1,2-Dichlorobenzene	20.2	0.30	ug/L	20	101	70-130	3.31	30	
Dichlorodifluoromethane (R12)	22.5	0.50	ug/L	20	112	16-148	6.28	30	
1,1-Dichloroethane	22.2	0.20	ug/L	20	111	67-120	4.04	30	
1,2-Dichloroethane (EDC)	25.8	0.30	ug/L	20	129	57-156	11.0	30	
cis-1,2-Dichloroethylene	21.8	0.20	ug/L	20	109	70-124	3.65	30	
1,1-Dichloroethylene	21.4	0.30	ug/L	20	107	50-149	0.563	30	
trans-1,2-Dichloroethylene	21.3	0.40	ug/L	20	106	66-126	0.609	30	
1,3-Dichloropropane	22.1	0.10	ug/L	20	110	79-113	5.16	30	

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874355
Date Received: 06/12/19
Date Reported: 06/27/19

Analyte	Reporting Result	Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD RPD	Limit Notes
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VOCs by GC/MS - Quality Control*Batch B9F2004 - EPA 5030B***LCS Dup (B9F2004-BSD1) Continued****Prepared & Analyzed: 06/20/19**

1,2-Dichloropropane	23.0	0.50	ug/L	20	115	53-139	6.23	30	
2,2-Dichloropropane	18.1	0.40	ug/L	20	90.5	44-162	16.0	30	
trans-1,3-Dichloropropylene	21.7	0.20	ug/L	20	109	76-121	0.551	30	
1,1-Dichloropropylene	22.4	0.20	ug/L	20	112	84-124	2.35	30	
cis-1,3-Dichloropropylene	22.1	0.20	ug/L	20	110	67-127	1.14	30	
Ethylbenzene	21.1	0.20	ug/L	20	106	86-124	1.46	30	
Hexachlorobutadiene	19.3	0.40	ug/L	20	96.4	76-140	1.49	30	
2-Hexanone (MBK)	21.3	2.0	ug/L	20	107	52-123	4.85	30	
Isopropylbenzene	21.1	0.20	ug/L	20	105	70-130	2.67	30	
4-Isopropyltoluene	20.4	0.20	ug/L	20	102	70-130	4.46	30	
Methyl-tert-Butyl Ether (MTBE)	44.3	1.7	ug/L	40	111	58-144	6.14	30	
Methylene Chloride	21.0	5.0	ug/L	20	105	50-135	2.90	30	
4-Methyl-2-pentanone (MIBK)	18.6	0.70	ug/L	20	92.9	49-139	3.39	30	J
Naphthalene	20.1	0.20	ug/L	20	101	74-128	4.09	30	
n-Propylbenzene	20.7	0.20	ug/L	20	103	70-130	5.23	30	
Styrene	20.8	0.20	ug/L	20	104	84-123	1.53	30	
1,1,1,2-Tetrachloroethane	20.4	0.40	ug/L	20	102	70-130	1.07	30	
1,1,2,2-Tetrachloroethane	23.3	0.30	ug/L	20	116	58-126	4.03	30	
Tetrachloroethylene (PCE)	19.4	0.50	ug/L	20	97.2	70-130	3.34	30	
Toluene	20.8	0.30	ug/L	20	104	83-118	0.0961	30	
1,2,4-Trichlorobenzene	19.0	0.20	ug/L	20	95.0	84-128	5.67	30	
1,2,3-Trichlorobenzene	19.0	0.20	ug/L	20	94.8	77-134	2.91	30	
1,1,2-Trichloroethane	21.6	0.30	ug/L	20	108	75-115	0.744	30	
1,1,1-Trichloroethane	23.5	0.30	ug/L	20	117	66-158	5.42	30	
Trichloroethylene (TCE)	22.2	0.20	ug/L	20	111	82-128	5.08	30	
Trichlorofluoromethane (R11)	19.6	0.20	ug/L	20	98.0	65-137	3.69	30	
1,2,3-Trichloropropane	22.7	0.30	ug/L	20	114	68-123	3.17	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	15.2	0.30	ug/L	20	76.2	62-130	4.74	30	
1,2,4-Trimethylbenzene	20.7	0.30	ug/L	20	103	70-130	3.00	30	
1,3,5-Trimethylbenzene	20.9	0.20	ug/L	20	105	70-130	2.78	30	
Vinyl chloride	24.2	0.50	ug/L	20	121	51-151	4.21	30	

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874355
Date Received: 06/12/19
Date Reported: 06/27/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD RPD	RPD Limit	Notes
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VOCs by GC/MS - Quality Control*Batch B9F2004 - EPA 5030B***LCS Dup (B9F2004-BSD1) Continued***Prepared & Analyzed: 06/20/19*

o-Xylene	21.3	0.30	ug/L	20	106	70-130	1.12	30	
m,p-Xylenes	42.2	0.40	ug/L	40	106	70-130	1.69	30	
Surrogate: 4-Bromofluorobenzene	48.2		ug/L	50	96.4	80-129			
Surrogate: Dibromofluoromethane	51.6		ug/L	50	103	68-137			
Surrogate: Toluene-d8	49.1		ug/L	50	98.1	83-134			

Matrix Spike (B9F2004-MS1)*Source: 9F13001-18 Prepared & Analyzed: 06/20/19*

Acetone	31.1	7.7	ug/L	20	10.5	103	11-169	J
Benzene	18.8	0.20	ug/L	20	94.1	56-135		
Bromobenzene	19.7	0.30	ug/L	20	98.4	70-130		
Bromoform	20.7	0.50	ug/L	20	104	74-125		
Bromochloromethane	22.6	0.20	ug/L	20	113	68-144		
Bromodichloromethane	19.5	0.50	ug/L	20	97.4	68-151		
Bromomethane	16.5	0.50	ug/L	20	82.5	54-142		
2-Butanone (MEK)	18.7	2.0	ug/L	20	93.6	62-145		
2-Chlorotoluene	20.3	0.20	ug/L	20	102	70-130		
2-Ethylhexane	21.0	0.20	ug/L	20	105	70-130		
2-Methylbenzene	20.4	0.20	ug/L	20	102	84-145		
Carbon Disulfide	22.1	0.30	ug/L	20	110	28-151		
Carbon Tetrachloride	22.6	0.30	ug/L	20	113	58-164		
Chlorobenzene	20.5	0.30	ug/L	20	102	70-130		
Chloroethane	32.2	0.50	ug/L	20	161	42-164		
Chloroform	21.3	0.30	ug/L	20	107	65-138		
Chloromethane	21.4	0.40	ug/L	20	107	50-152		
4-Chlorotoluene	20.6	0.20	ug/L	20	103	70-130		
2-Chlorotoluene	20.5	0.30	ug/L	20	103	70-130		
1,2-Dibromo-3-chloropropane	21.0	0.40	ug/L	20	105	53-161		
Dibromochloromethane	21.3	0.30	ug/L	20	107	70-130		
1,2-Dibromoethane (EDB)	21.7	0.30	ug/L	20	108	76-130		
Dibromomethane	21.3	0.40	ug/L	20	106	62-135		
1,3-Dichlorobenzene	19.8	0.10	ug/L	20	99.2	70-130		
1,4-Dichlorobenzene	19.4	0.30	ug/L	20	96.8	70-130		

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874355
Date Received: 06/12/19
Date Reported: 06/27/19

Analyte	Reporting Result	Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD RPD	RPD Limit	Notes
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VOCs by GC/MS - Quality Control

Batch B9F2004 - EPA 5030B

Matrix Spike (B9F2004-MS1) Continued Source: 9F13001-18 Prepared & Analyzed: 06/20/19

1,2-Dichlorobenzene	20.2	0.30	ug/L	20		101	70-130			
Dichlorodifluoromethane (R12)	20.8	0.50	ug/L	20		104	17-153			
1,1-Dichloroethane	30.1	0.20	ug/L	20	7.50	113	55-131			
1,2-Dichloroethane (EDC)	25.5	0.30	ug/L	20		128	52-168			
cis-1,2-Dichloroethylene	67.1	0.20	ug/L	20	43.3	119	70-130			
1,1-Dichloroethylene	25.4	0.30	ug/L	20	3.39	110	51-140			
trans-1,2-Dichloroethylene	23.6	0.40	ug/L	20	1.89	109	59-127			
1,3-Dichloropropane	21.6	0.10	ug/L	20		108	80-121			
1,2-Dichloropropane	22.6	0.50	ug/L	20		113	52-142			
2,2-Dichloropropane	19.2	0.40	ug/L	20		95.8	36-168			
trans-1,3-Dichloropropylene	21.4	0.20	ug/L	20		107	78-130			
1,1-Dichloropropylene	22.3	0.20	ug/L	20		112	76-132			
cis-1,3-Dichloropropylene	22.2	0.20	ug/L	20		111	66-130			
Ethylbenzene	21.1	0.20	ug/L	20		105	86-128			
Hexachlorobutadiene	18.8	0.40	ug/L	20		94.0	70-130			
2-Hexanone (MBK)	22.1	2.0	ug/L	20		110	52-141			
Isopropylbenzene	20.7	0.20	ug/L	20		104	70-130			
4-Isopropyltoluene	20.6	0.20	ug/L	20		103	83-149			
Methyl-tert-Butyl Ether (MTBE)	43.6	1.7	ug/L	40		109	56-150			
Methylene Chloride	19.8	5.0	ug/L	20		99.0	70-130			
4-Methyl-2-pentanone (MIBK)	19.7	0.70	ug/L	20		98.6	60-148	J		
Naphthalene	20.3	0.20	ug/L	20		102	70-130			
n-Propylbenzene	20.7	0.20	ug/L	20		104	70-130			
Styrene	20.9	0.20	ug/L	20		104	65-141			
1,1,1,2-Tetrachloroethane	20.2	0.40	ug/L	20		101	70-130			
1,1,2,2-Tetrachloroethane	22.9	0.30	ug/L	20		114	62-134			
Tetrachloroethylene (PCE)	19.5	0.50	ug/L	20		97.4	70-130			
Toluene	20.9	0.30	ug/L	20		104	81-123			
1,2,4-Trichlorobenzene	19.2	0.20	ug/L	20		95.8	80-137			
1,2,3-Trichlorobenzene	18.7	0.20	ug/L	20		93.6	73-144			
1,1,2-Trichloroethane	21.9	0.30	ug/L	20		110	76-122			
1,1,1-Trichloroethane	22.0	0.30	ug/L	20		110	62-164			

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Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874355
Date Received: 06/12/19
Date Reported: 06/27/19

Analyte	Reporting Result	Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Notes
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VOCs by GC/MS - Quality Control*Batch B9F2004 - EPA 5030B***Matrix Spike (B9F2004-MS1) Continued Source: 9F13001-18 Prepared & Analyzed: 06/20/19**

Trichloroethylene (TCE)	31.8	0.20	ug/L	20	8.80	115	72-136			
Trichlorofluoromethane (R11)	19.7	0.20	ug/L	20		98.4	59-144			
1,2,3-Trichloropropane	22.7	0.30	ug/L	20		113	69-135			
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	15.3	0.30	ug/L	20		76.3	62-126			
1,2,4-Trimethylbenzene	20.5	0.30	ug/L	20		103	89-134			
1,3,5-Trimethylbenzene	20.8	0.20	ug/L	20		104	70-130			
Vinyl chloride	23.5	0.50	ug/L	20		117	54-150			
o-Xylene	21.2	0.30	ug/L	20		106	70-130			
m,p-Xylenes	42.3	0.40	ug/L	40		106	70-130			
Surrogate: 4-Bromofluorobenzene	48.0		ug/L	50		96.1	80-129			
Surrogate: Dibromofluoromethane	50.4		ug/L	50		101	68-137			
Surrogate: Toluene-d8	48.2		ug/L	50		96.4	83-134			

Matrix Spike Dup (B9F2004-MSD1) Source: 9F13001-18 Prepared & Analyzed: 06/20/19

Acetone	28.5	7.7	ug/L	20	10.5	90.0	11-169	8.80	30	J
Benzene	18.5	0.20	ug/L	20		92.3	56-135	1.93	30	
Bromobenzene	20.0	0.30	ug/L	20		100	70-130	1.81	30	
Bromochloromethane	20.0	0.50	ug/L	20		99.8	74-125	3.69	30	
Bromodichloromethane	22.2	0.20	ug/L	20		111	68-144	1.88	30	
Bromoform	19.5	0.50	ug/L	20		97.6	68-151	0.205	30	
Bromomethane	20.9	0.50	ug/L	20		105	54-142	23.7	30	
2-Butanone (MEK)	19.6	2.0	ug/L	20		97.8	62-145	4.44	30	J
tert-Butylbenzene	20.5	0.20	ug/L	20		103	70-130	1.03	30	
n-Butylbenzene	20.8	0.20	ug/L	20		104	70-130	1.29	30	
sec-Butylbenzene	20.5	0.20	ug/L	20		102	84-145	0.245	30	
Carbon Disulfide	21.1	0.30	ug/L	20		105	28-151	4.59	30	
Carbon Tetrachloride	21.5	0.30	ug/L	20		107	58-164	4.91	30	
Chlorobenzene	20.0	0.30	ug/L	20		100	70-130	2.27	30	
Chloroethane	45.6	0.50	ug/L	20		228	42-164	34.6	30	**, AA-C1
Chloroform	20.4	0.30	ug/L	20		102	65-138	4.66	30	

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874355
Date Received: 06/12/19
Date Reported: 06/27/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD RPD	Limit Notes
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VOCs by GC/MS - Quality Control*Batch B9F2004 - EPA 5030B***Matrix Spike Dup (B9F2004-MSD1)****Source: 9F13001-18 Prepared & Analyzed: 06/20/19****Continued**

Chloromethane	21.0	0.40	ug/L	20	105	50-152	2.31	30
4-Chlorotoluene	20.6	0.20	ug/L	20	103	70-130	0.146	30
2-Chlorotoluene	20.4	0.30	ug/L	20	102	70-130	0.587	30
1,2-Dibromo-3-chloropropane	22.1	0.40	ug/L	20	110	53-161	4.87	30
Dibromochloromethane	20.9	0.30	ug/L	20	104	70-130	2.18	30
1,2-Dibromoethane (EDB)	21.4	0.30	ug/L	20	107	76-130	1.21	30
Dibromomethane	20.5	0.40	ug/L	20	102	62-135	3.69	30
1,3-Dichlorobenzene	19.7	0.10	ug/L	20	98.4	70-130	0.861	30
1,4-Dichlorobenzene	19.7	0.30	ug/L	20	98.3	70-130	1.59	30
1,2-Dichlorobenzene	20.4	0.30	ug/L	20	102	70-130	0.789	30
Dichlorodifluoromethane (R12)	19.1	0.50	ug/L	20	95.4	17-153	8.63	30
1,1-Dichloroethane	28.2	0.20	ug/L	20	7.50	104	55-131	6.48
1,2-Dichloroethane (EDC)	24.5	0.30	ug/L	20	123	52-168	3.92	30
cis-1,2-Dichloroethylene	63.1	0.20	ug/L	20	43.3	99.2	70-130	6.14
1,1-Dichloroethylene	24.5	0.30	ug/L	20	3.39	106	51-140	3.49
trans-1,2-Dichloroethylene	22.8	0.40	ug/L	20	1.89	105	59-127	3.40
1,3-Dichloropropane	21.2	0.10	ug/L	20	106	80-121	1.86	30
1,2-Dichloropropane	22.1	0.50	ug/L	20	111	52-142	1.93	30
2,2-Dichloropropane	17.6	0.40	ug/L	20	87.9	36-168	8.55	30
trans-1,3-Dichloropropylene	21.2	0.20	ug/L	20	106	78-130	0.799	30
1,1-Dichloropropylene	21.3	0.20	ug/L	20	106	76-132	4.82	30
cis-1,3-Dichloropropylene	21.7	0.20	ug/L	20	108	66-130	2.33	30
Ethylbenzene	20.7	0.20	ug/L	20	104	86-128	1.68	30
Hexachlorobutadiene	19.5	0.40	ug/L	20	97.4	70-130	3.55	30
2-Hexanone (MBK)	20.9	2.0	ug/L	20	105	52-141	5.35	30
Isopropylbenzene	20.6	0.20	ug/L	20	103	70-130	0.678	30
4-Isopropyltoluene	20.2	0.20	ug/L	20	101	83-149	2.06	30
Methyl-tert-Butyl Ether (MTBE)	44.0	1.7	ug/L	40	110	56-150	0.913	30
Methylene Chloride	19.3	5.0	ug/L	20	96.6	70-130	2.35	30
4-Methyl-2-pentanone (MIBK)	20.2	0.70	ug/L	20	101	60-148	2.16	30
Naphthalene	21.4	0.20	ug/L	20	107	70-130	5.03	30

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874355
Date Received: 06/12/19
Date Reported: 06/27/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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VOCs by GC/MS - Quality Control

Batch B9F2004 - EPA 5030B

Matrix Spike Dup (B9F2004-MSD1)

Source: 9F13001-18 Prepared & Analyzed: 06/20/19

Continued

n-Propylbenzene	20.8	0.20	ug/L	20	104	70-130	0.289	30	
Styrene	20.6	0.20	ug/L	20	103	65-141	1.20	30	
1,1,1,2-Tetrachloroethane	20.0	0.40	ug/L	20	100	70-130	0.944	30	
1,1,2,2-Tetrachloroethane	23.2	0.30	ug/L	20	116	62-134	1.30	30	
Tetrachloroethylene (PCE)	19.4	0.50	ug/L	20	96.8	70-130	0.567	30	
Toluene	20.0	0.30	ug/L	20	100	81-123	4.16	30	
1,2,4-Trichlorobenzene	19.8	0.20	ug/L	20	98.9	80-137	3.24	30	
1,2,3-Trichlorobenzene	19.5	0.20	ug/L	20	97.3	73-144	3.93	30	
1,1,2-Trichloroethane	21.5	0.30	ug/L	20	108	76-122	1.75	30	
1,1,1-Trichloroethane	21.2	0.30	ug/L	20	106	62-164	3.52	30	
Trichloroethylene (TCE)	30.5	0.20	ug/L	20	8.80	108	72-136	4.20	30
Trichlorofluoromethane (R11)	18.1	0.20	ug/L	20	90.6	59-144	8.31	30	
1,2,3-Trichloropropane	23.3	0.30	ug/L	20	116	69-135	2.66	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	14.8	0.30	ug/L	20	74.2	62-126	2.72	30	
1,2,4-Trimethylbenzene	20.7	0.30	ug/L	20	103	89-134	0.728	30	
1,3,5-Trimethylbenzene	20.6	0.20	ug/L	20	103	70-130	0.869	30	
Vinyl chloride	22.6	0.50	ug/L	20	113	54-150	3.64	30	
o-Xylene	20.8	0.30	ug/L	20	104	70-130	2.00	30	
m,p-Xylenes	41.4	0.40	ug/L	40	103	70-130	2.10	30	
Surrogate: 4-Bromofluorobenzene	47.6		ug/L	50	95.3	80-129			
Surrogate: Dibromofluoromethane	49.1		ug/L	50	98.3	68-137			
Surrogate: Toluene-d8	47.4		ug/L	50	94.7	83-134			

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874355
Date Received: 06/12/19
Date Reported: 06/27/19

Special Notes

[1] = ** : Exceeds upper control limit.

[2] = AA-C1 : Exceeds RPD control limit.

J : Detected but below the Method Reporting Limit (MRL) / Limit of Quantitation (LOQ); therefore, result is an estimated concentration (CLP J-Flag).

Viorel Vasile
Operations Manager

ATTACHMENT C

Industrial Wastewater Discharge Analytical Report



9765 Eton Avenue
Chatsworth
California 91311
Tel: (818) 998-5547
Fax: (818) 998-7258

July 02, 2019

Peter Bennett
Haley & Aldrich (Oakland)
1956 Webster St., Suite 450
Oakland, CA 94612

Re : Cooper Drum - WDR Samples / 130072-024

MB874362 / 9F19016

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received on 06/19/19 14:30 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Program Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report or require additional information please call me at American Analytics.

Sincerely,

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)

Project No: 130072-024

Project Name: Cooper Drum - WDR Samples

AA Project No: MB874362

Date Received: 06/19/19

Date Reported: 07/02/19

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
624					
CD-IDWP-061919-0001	9F19016-01	Water	5	06/19/19 12:30	06/19/19 14:30
625					
CD-IDWP-061919-0001	9F19016-01	Water	5	06/19/19 12:30	06/19/19 14:30
COD 410.4					
CD-IDWP-061919-0001	9F19016-01	Water	5	06/19/19 12:30	06/19/19 14:30
pH Measurement SM4500H+ B					
CD-IDWP-061919-0001	9F19016-01	Water	5	06/19/19 12:30	06/19/19 14:30
Sulfide Dissolved SM4500-S=D					
CD-IDWP-061919-0001	9F19016-01	Water	5	06/19/19 12:30	06/19/19 14:30
TSS SM2540D					
CD-IDWP-061919-0001	9F19016-01	Water	5	06/19/19 12:30	06/19/19 14:30

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - WDR Samples
Method: EPA 625 Semivolatile Organics by GC/MS

AA Project No: MB874362
Date Received: 06/19/19
Date Reported: 07/02/19
Units: ug/L

Date Sampled:	06/19/19		
Date Prepared:	06/26/19		
Date Analyzed:	06/26/19		
AA ID No:	9F19016-01		
Client ID No:	CD-IDWP-06191 9-0001		
Matrix:	Water		
Dilution Factor:	1	MDL	MRL

625 (EPA 625)

3,3'-Dichlorobenzidine	<12	12	20
Acenaphthene	<3.0	3.0	5.0
Acenaphthylene	<3.0	3.0	5.0
Aniline	<10	10	10
Anthracene	<3.0	3.0	5.0
Azobenzene	<3.0	3.0	5.0
Benzidine	<17	17	20
Benzo(a)anthracene	<3.0	3.0	20
Benzo(a)pyrene	<3.0	3.0	5.0
Benzo(b)fluoranthene	<4.0	4.0	5.0
Benzo(g,h,i)perylene	<5.0	5.0	5.0
Benzoic acid	<5.0	5.0	50
Benzo(k)fluoranthene	<5.0	5.0	5.0
Benzyl alcohol	<7.0	7.0	10
4-Bromophenyl phenyl ether	<4.0	4.0	5.0
Butyl benzyl phthalate	<6.0	6.0	10
4-Chloro-3-methylphenol	<8.0	8.0	10
4-Chloroaniline	<7.0	7.0	20
Bis(2-chloroethoxy)methane	<5.0	5.0	5.0
Bis(2-chloroethyl)ether	<4.0	4.0	5.0
Bis(2-chloroisopropyl)ether	<5.0	5.0	5.0
2-Choronaphthalene	<5.0	5.0	5.0
2-Chlorophenol	<5.0	5.0	5.0
4-Chlorophenyl phenyl ether	<3.0	3.0	5.0
Chrysene	<4.0	4.0	5.0
Dibenzo(a,h)anthracene	<5.0	5.0	5.0

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - WDR Samples
Method: EPA 625 Semivolatile Organics by GC/MS

AA Project No: MB874362
Date Received: 06/19/19
Date Reported: 07/02/19
Units: ug/L

Date Sampled:	06/19/19		
Date Prepared:	06/26/19		
Date Analyzed:	06/26/19		
AA ID No:	9F19016-01		
Client ID No:	CD-IDWP-06191 9-0001		
Matrix:	Water		
Dilution Factor:	1	MDL	MRL

625 (EPA 625) (continued)

Dibenzofuran	<3.0	3.0	5.0
Di-n-butyl phthalate	<5.0	5.0	100
1,2-Dichlorobenzene	<2.0	2.0	5.0
1,3-Dichlorobenzene	<3.0	3.0	5.0
1,4-Dichlorobenzene	<3.0	3.0	5.0
2,4-Dichlorophenol	<5.0	5.0	5.0
Diethyl phthalate	<3.0	3.0	40
2,4-Dimethylphenol	<6.0	6.0	20
Dimethyl phthalate	<3.0	3.0	10
4,6-Dinitro-2-methylphenol	<17	17	20
2,4-Dinitrophenol	<10	10	20
2,6-Dinitrotoluene	<3.0	3.0	5.0
2,4-Dinitrotoluene	<3.0	3.0	5.0
Di-n-octyl phthalate	<7.0	7.0	10
1,2-Diphenylhydrazine	<3.0	3.0	5.0
Bis(2-ethylhexyl)phthalate	<19	19	50
Fluoranthene	<4.0	4.0	5.0
Fluorene	<3.0	3.0	5.0
Hexachlorobenzene	<7.0	7.0	10
Hexachlorobutadiene	<8.0	8.0	10
Hexachlorocyclopentadiene	<6.0	6.0	10
Hexachloroethane	<3.0	3.0	5.0
Indeno (1,2,3-cd) pyrene	<5.0	5.0	20
Isophorone	<4.0	4.0	5.0
2-Methylnaphthalene	<5.0	5.0	5.0
2-Methylphenol	<4.0	4.0	10

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - WDR Samples
Method: EPA 625 Semivolatile Organics by GC/MS

AA Project No: MB874362
Date Received: 06/19/19
Date Reported: 07/02/19
Units: ug/L

Date Sampled:	06/19/19		
Date Prepared:	06/26/19		
Date Analyzed:	06/26/19		
AA ID No:	9F19016-01		
Client ID No:	CD-IDWP-06191 9-0001		
Matrix:	Water		
Dilution Factor:	1	MDL	MRL

625 (EPA 625) (continued)

3-Methylphenol	<4.0	4.0	10
4-Methylphenol	<4.0	4.0	10
Naphthalene	<4.0	4.0	5.0
4-Nitroaniline	<5.0	5.0	20
3-Nitroaniline	<10	10	20
2-Nitroaniline	<4.0	4.0	20
Nitrobenzene	<5.0	5.0	5.0
2-Nitrophenol	<6.0	6.0	10
4-Nitrophenol	<5.0	5.0	10
N-Nitrosodimethylamine	<3.0	3.0	5.0
N-Nitrosodiphenylamine	<4.0	4.0	5.0
N-Nitrosodi-n-propylamine	<6.0	6.0	10
Pentachlorophenol	<6.5	6.5	20
Phenanthrene	<3.0	3.0	5.0
Phenol	<3.0	3.0	5.0
Pyrene	<3.0	3.0	5.0
1,2,4-Trichlorobenzene	<4.0	4.0	10
2,4,5-Trichlorophenol	<6.0	6.0	10
2,4,6-Trichlorophenol	<8.0	8.0	10

Surrogates

		<u>%REC Limits</u>
2-Fluorobiphenyl	71%	43-116
2-Fluorophenol	42%	21-100
Nitrobenzene-d5	90%	35-134
Phenol-d6	31%	10-94
Terphenyl-d14	89%	33-141

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - WDR Samples
Method: EPA 625 Semivolatile Organics by GC/MS

AA Project No: MB874362
Date Received: 06/19/19
Date Reported: 07/02/19
Units: ug/L

Date Sampled: 06/19/19
Date Prepared: 06/26/19
Date Analyzed: 06/26/19
AA ID No: 9F19016-01
Client ID No: CD-IDWP-06191
9-0001
Matrix: Water
Dilution Factor: 1

MDL MRL

625 (EPA 625) (continued)

2,4,6-Tribromophenol	62%	10-123
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Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - WDR Samples
Method: General Chemistry Analyses

AA Project No: MB874362
Date Received: 06/19/19
Date Reported: 07/02/19

AA I.D. No.	Client I.D. No.	Sampled	Prepared	Analyzed	Dilution	Result	Units	MDL	MRL
<u>COD 410.4 (EPA 410.4)</u>									
9F19016-01	CD-IDWP-061919-001	06/19/19	06/26/19	06/26/19	1	23	mg/L	7	10
<u>pH Measurement SM4500H+ B (SM4500H+ B)</u>									
9F19016-01	CD-IDWP-061919-001	06/19/19	06/19/19	06/19/19	1	6.9	pH Units	0.01	0.01
<u>Sulfide Dissolved SM4500-S=D (SM4500-S=D)</u>									
9F19016-01	CD-IDWP-061919-001	06/19/19	06/26/19	06/26/19	1	<0.025	mg/L	0.025	0.05
<u>TSS SM2540D (SM2540D)</u>									
9F19016-01	CD-IDWP-061919-001	06/19/19	06/24/19	06/24/19	1	7.6J	mg/L	5	10

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - WDR Samples
Method: VOCs by GC/MS EPA 624

AA Project No: MB874362
Date Received: 06/19/19
Date Reported: 07/02/19
Units: ug/L

Date Sampled:	06/19/19		
Date Prepared:	06/24/19		
Date Analyzed:	06/24/19		
AA ID No:	9F19016-01		
Client ID No:	CD-IDWP-06191 9-0001		
Matrix:	Water		
Dilution Factor:	1	MDL	MRL

624 (EPA 624)

Benzene	0.72	0.20	0.50
Bromodichloromethane	<0.20	0.20	0.50
Bromoform	<0.50	0.50	0.50
Bromomethane	<0.50	0.50	0.50
Carbon Tetrachloride	<0.30	0.30	0.50
Chlorobenzene	<0.30	0.30	0.50
Chloroethane	<0.50	0.50	0.50
2-Chloroethyl Vinyl Ether	<6.0	6.0	10
Chloroform	<0.30	0.30	0.50
Chloromethane	<0.40	0.40	0.50
Dibromochloromethane	<0.30	0.30	0.50
1,2-Dichlorobenzene	<0.30	0.30	0.50
1,4-Dichlorobenzene	<0.30	0.30	0.50
1,3-Dichlorobenzene	<0.10	0.10	0.50
1,1-Dichloroethane	1.8	0.20	0.50
1,2-Dichloroethane (EDC)	<0.30	0.30	0.50
trans-1,2-Dichloroethylene	3.1	0.40	0.50
1,1-Dichloroethylene	0.55	0.30	0.50
1,2-Dichloropropane	<0.50	0.50	0.50
cis-1,3-Dichloropropylene	<0.20	0.20	0.50
trans-1,3-Dichloropropylene	<0.20	0.20	0.50
Ethylbenzene	<0.20	0.20	0.50
Methylene Chloride	<5.0	5.0	5.0
1,1,2,2-Tetrachloroethane	<0.30	0.30	0.50
Tetrachloroethylene (PCE)	<0.50	0.50	0.50
Toluene	<0.30	0.30	0.50

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - WDR Samples
Method: VOCs by GC/MS EPA 624

AA Project No: MB874362
Date Received: 06/19/19
Date Reported: 07/02/19
Units: ug/L

Date Sampled:	06/19/19		
Date Prepared:	06/24/19		
Date Analyzed:	06/24/19		
AA ID No:	9F19016-01		
Client ID No:	CD-IDWP-06191 9-0001		
Matrix:	Water		
Dilution Factor:	1	MDL	MRL

624 (EPA 624) (continued)

1,1,2-Trichloroethane	<0.30	0.30	0.50
1,1,1-Trichloroethane	<0.30	0.30	0.50
Trichloroethylene (TCE)	1.4	0.20	0.50
Vinyl chloride	<0.50	0.50	0.50

Surrogates		%REC Limits
4-Bromofluorobenzene	99%	70-140
Dibromofluoromethane	104%	70-140
Toluene-d8	97%	70-140

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - WDR Samples

AA Project No: MB874362
Date Received: 06/19/19
Date Reported: 07/02/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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EPA 625 Semivolatile Organics by GC/MS - Quality Control

Batch B9F2610 - EPA 3510C_MS

Blank (B9F2610-BLK1)

Prepared & Analyzed: 06/26/19

3,3'-Dichlorobenzidine	<12	12	ug/L
Acenaphthene	<3.0	3.0	ug/L
Acenaphthylene	<3.0	3.0	ug/L
Aniline	<10	10	ug/L
Anthracene	<3.0	3.0	ug/L
Azobenzene	<3.0	3.0	ug/L
Benzidine	<17	17	ug/L
Benzo(a)anthracene	<3.0	3.0	ug/L
Benzo(a)pyrene	<3.0	3.0	ug/L
Benzo(b)fluoranthene	<4.0	4.0	ug/L
Benzo(g,h,i)perylene	<5.0	5.0	ug/L
Benzoic acid	<5.0	5.0	ug/L
Benzo(k)fluoranthene	<5.0	5.0	ug/L
Benzyl alcohol	<7.0	7.0	ug/L
4-Bromophenyl phenyl ether	<4.0	4.0	ug/L
Butyl benzyl phthalate	<6.0	6.0	ug/L
4-Chloro-3-methylphenol	<8.0	8.0	ug/L
4-Chloroaniline	<7.0	7.0	ug/L
Bis(2-chloroethoxy)methane	<5.0	5.0	ug/L
Bis(2-chloroethyl)ether	<4.0	4.0	ug/L
Bis(2-chloroisopropyl)ether	<5.0	5.0	ug/L
2-Chloronaphthalene	<5.0	5.0	ug/L
2-Chlorophenol	<5.0	5.0	ug/L
4-Chlorophenyl phenyl ether	<3.0	3.0	ug/L
Chrysene	<4.0	4.0	ug/L
Dibenzo(a,h)anthracene	<5.0	5.0	ug/L
Dibenzofuran	<3.0	3.0	ug/L
Di-n-butyl phthalate	<5.0	5.0	ug/L
1,2-Dichlorobenzene	<2.0	2.0	ug/L
1,3-Dichlorobenzene	<3.0	3.0	ug/L
1,4-Dichlorobenzene	<3.0	3.0	ug/L
2,4-Dichlorophenol	<5.0	5.0	ug/L

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - WDR Samples

AA Project No: MB874362
Date Received: 06/19/19
Date Reported: 07/02/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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EPA 625 Semivolatile Organics by GC/MS - Quality Control

Batch B9F2610 - EPA 3510C_MS

Blank (B9F2610-BLK1) Continued

Prepared & Analyzed: 06/26/19

Diethyl phthalate	<3.0	3.0	ug/L
2,4-Dimethylphenol	<6.0	6.0	ug/L
Dimethyl phthalate	<3.0	3.0	ug/L
4,6-Dinitro-2-methylphenol	<17	17	ug/L
2,4-Dinitrophenol	<10	10	ug/L
2,6-Dinitrotoluene	<3.0	3.0	ug/L
2,4-Dinitrotoluene	<3.0	3.0	ug/L
Di-n-octyl phthalate	<7.0	7.0	ug/L
1,2-Diphenylhydrazine	<3.0	3.0	ug/L
Bis(2-ethylhexyl)phthalate	<19	19	ug/L
Fluoranthene	<4.0	4.0	ug/L
Fluorene	<3.0	3.0	ug/L
Hexachlorobenzene	<7.0	7.0	ug/L
Hexachlorobutadiene	<8.0	8.0	ug/L
Hexachlorocyclopentadiene	<6.0	6.0	ug/L
Hexachloroethane	<3.0	3.0	ug/L
Indeno (1,2,3-cd) pyrene	<5.0	5.0	ug/L
Isophorone	<4.0	4.0	ug/L
2-Methylnaphthalene	<5.0	5.0	ug/L
2-Methylphenol	<4.0	4.0	ug/L
3-Methylphenol	<4.0	4.0	ug/L
4-Methylphenol	<4.0	4.0	ug/L
Naphthalene	<4.0	4.0	ug/L
4-Nitroaniline	<5.0	5.0	ug/L
3-Nitroaniline	<10	10	ug/L
2-Nitroaniline	<4.0	4.0	ug/L
Nitrobenzene	<5.0	5.0	ug/L
2-Nitrophenol	<6.0	6.0	ug/L
4-Nitrophenol	<5.0	5.0	ug/L
N-Nitrosodimethylamine	<3.0	3.0	ug/L
N-Nitrosodiphenylamine	<4.0	4.0	ug/L
N-Nitrosodi-n-propylamine	<6.0	6.0	ug/L

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - WDR Samples

AA Project No: MB874362
Date Received: 06/19/19
Date Reported: 07/02/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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EPA 625 Semivolatile Organics by GC/MS - Quality Control*Batch B9F2610 - EPA 3510C_MS***Blank (B9F2610-BLK1) Continued***Prepared & Analyzed: 06/26/19*

Pentachlorophenol	<6.5	6.5	ug/L							
Phenanthrene	<3.0	3.0	ug/L							
Phenol	<3.0	3.0	ug/L							
Pyrene	<3.0	3.0	ug/L							
1,2,4-Trichlorobenzene	<4.0	4.0	ug/L							
2,4,5-Trichlorophenol	<6.0	6.0	ug/L							
2,4,6-Trichlorophenol	<8.0	8.0	ug/L							
<i>Surrogate: 2-Fluorobiphenyl</i>	19.6		ug/L	25		78.3	43-116			
<i>Surrogate: 2-Fluorophenol</i>	22.2		ug/L	50		44.5	21-100			
<i>Surrogate: Nitrobenzene-d5</i>	25.5		ug/L	25		102	35-134			
<i>Surrogate: Phenol-d6</i>	18.4		ug/L	50		36.8	10-94			
<i>Surrogate: Terphenyl-d14</i>	24.8		ug/L	25		99.3	33-141			
<i>Surrogate: 2,4,6-Tribromophenol</i>	32.5		ug/L	50		65.0	10-123			

LCS (B9F2610-BS1)*Prepared & Analyzed: 06/26/19*

Acenaphthene	19.8	3.0	ug/L	30		66.1	31-104			
Anthracene	22.8	3.0	ug/L	30		76.1	33-115			
Benzo(a)pyrene	21.7	3.0	ug/L	30		72.2	26-111			
Benzo(b)fluoranthene	23.0	4.0	ug/L	30		76.7	24-118			
Butyl benzyl phthalate	22.8	6.0	ug/L	30		76.1	12-126			
4-Chloro-3-methylphenol	17.6	8.0	ug/L	30		58.7	23-104			
Bis(2-chloroethyl)ether	22.8	4.0	ug/L	30		76.1	30-121			
2-Chloronaphthalene	19.4	5.0	ug/L	30		64.8	35-102			
4-Chlorophenyl phenyl ether	17.5	3.0	ug/L	30		58.4	41-128			
1,4-Dichlorobenzene	17.0	3.0	ug/L	30		56.6	25-100			
2,4-Dichlorophenol	14.2	5.0	ug/L	30		47.3	14-100			
Di-n-octyl phthalate	25.0	7.0	ug/L	30		83.5	13-120			
Fluoranthene	21.7	4.0	ug/L	30		72.4	26-111			
Fluorene	20.7	3.0	ug/L	30		68.9	37-94			
Hexachlorobenzene	24.1	7.0	ug/L	30		80.4	2-152			
Hexachlorobutadiene	11.7	8.0	ug/L	30		38.9	24-86			
Hexachloroethane	18.1	3.0	ug/L	30		60.4	17-115			

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - WDR Samples

AA Project No: MB874362
Date Received: 06/19/19
Date Reported: 07/02/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD RPD	RPD Limit	Notes
EPA 625 Semivolatile Organics by GC/MS - Quality Control										
<i>Batch B9F2610 - EPA 3510C_MS</i>										
LCS (B9F2610-BS1) Continued										
Isophorone	17.6	4.0	ug/L	30		58.6	35-101			
Naphthalene	16.6	4.0	ug/L	30		55.3	36-94			
Nitrobenzene	20.9	5.0	ug/L	30		69.8	34-112			
2-Nitrophenol	13.4	6.0	ug/L	30		44.5	8.2-99			
N-Nitrosodi-n-propylamine	26.6	6.0	ug/L	30		88.8	20-138			
Phenol	10.6	3.0	ug/L	30		35.2	12-52			
Pyrene	23.1	3.0	ug/L	30		77.0	29-120			
1,2,4-Trichlorobenzene	13.8	4.0	ug/L	30		45.9	29-89			
2,4,6-Trichlorophenol	14.5	8.0	ug/L	30		48.2	7.9-100			
Surrogate: 2-Fluorobiphenyl	16.9		ug/L	25		67.5	43-116			
Surrogate: 2-Fluorophenol	23.8		ug/L	50		47.7	21-100			
Surrogate: Nitrobenzene-d5	22.8		ug/L	25		91.3	35-134			
Surrogate: Phenol-d6	17.9		ug/L	50		35.7	10-94			
Surrogate: Terphenyl-d4	27.0		ug/L	25		108	33-141			
Surrogate: 2,4,6-Tribromophenol	30.8		ug/L	50		61.6	10-123			
LCS Dup (B9F2610-BSD1)										
Prepared & Analyzed: 06/26/19										
Acenaphthene	23.1	3.0	ug/L	30		77.0	31-104	15.3	30	
Anthracene	25.4	3.0	ug/L	30		84.7	33-115	10.7	30	
Benzo(a)pyrene	23.5	3.0	ug/L	30		78.2	26-111	7.98	30	
Benzo(b)fluoranthene	23.9	4.0	ug/L	30		79.6	24-118	3.67	30	
Butyl benzyl phthalate	24.4	6.0	ug/L	30		81.3	12-126	6.61	30	
4-Chloro-3-methylphenol	18.5	8.0	ug/L	30		61.6	23-104	4.88	30	
Bis(2-chloroethyl)ether	27.8	4.0	ug/L	30		92.6	30-121	19.5	30	
2-Chloronaphthalene	22.2	5.0	ug/L	30		74.1	35-102	13.3	30	
4-Chlorophenyl phenyl ether	19.3	3.0	ug/L	30		64.5	41-128	9.82	30	
1,4-Dichlorobenzene	21.3	3.0	ug/L	30		70.9	25-100	22.4	30	
2,4-Dichlorophenol	13.6	5.0	ug/L	30		45.2	14-100	4.54	30	
Di-n-octyl phthalate	24.3	7.0	ug/L	30		80.9	13-120	3.20	30	
Fluoranthene	23.3	4.0	ug/L	30		77.7	26-111	7.06	30	
Fluorene	22.4	3.0	ug/L	30		74.6	37-94	8.04	30	
Hexachlorobenzene	26.2	7.0	ug/L	30		87.2	2-152	8.11	30	

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LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - WDR Samples

AA Project No: MB874362
Date Received: 06/19/19
Date Reported: 07/02/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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EPA 625 Semivolatile Organics by GC/MS - Quality Control*Batch B9F2610 - EPA 3510C_MS***LCS Dup (B9F2610-BSD1) Continued****Prepared & Analyzed: 06/26/19**

Hexachlorobutadiene	15.0	8.0	ug/L	30	50.1	24-86	25.1	30	
Hexachloroethane	23.6	3.0	ug/L	30	78.5	17-115	26.1	30	
Isophorone	21.7	4.0	ug/L	30	72.4	35-101	21.0	30	
Naphthalene	20.5	4.0	ug/L	30	68.3	36-94	21.0	30	
Nitrobenzene	25.1	5.0	ug/L	30	83.7	34-112	18.2	30	
2-Nitrophenol	12.3	6.0	ug/L	30	41.1	8.2-99	8.02	30	
N-Nitrosodi-n-propylamine	32.1	6.0	ug/L	30	107	20-138	18.6	30	
Phenol	11.5	3.0	ug/L	30	38.4	12-52	8.70	30	
Pyrene	24.8	3.0	ug/L	30	82.7	29-120	7.14	30	
1,2,4-Trichlorobenzene	17.2	4.0	ug/L	30	57.2	29-89	22.0	30	
2,4,6-Trichlorophenol	11.6	8.0	ug/L	30	38.8	7.9-100	21.6	30	
Surrogate: 2-Fluorobiphenyl	20.5		ug/L	25	81.9	43-116			
Surrogate: 2-Fluorophenol	20.0		ug/L	50	40.0	21-100			
Surrogate: Nitrobenzene-d5	27.4		ug/L	25	110	35-134			
Surrogate: Phenol-d6	18.1		ug/L	50	36.3	10-94			
Surrogate: Terphenyl-d14	28.6		ug/L	25	114	33-141			
Surrogate: 2,4,6-Tribromophenol	24.4		ug/L	50	48.7	10-123			

General Chemistry Analyses - Quality Control*Batch B9F2015 - NO PREP***Duplicate (B9F2015-DUP1)****Source: 9F19016-01 Prepared & Analyzed: 06/19/19**

pH	6.90	0.010	pH Units	6.90	0.00	20
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*Batch B9F2427 - NO PREP***Blank (B9F2427-BLK1)****Prepared & Analyzed: 06/24/19**

Total Suspended Solids	<5.0	5.0	mg/L			
LCS (B9F2427-BS1)						
Total Suspended Solids	49.0	5.0	mg/L	50	98.0	80-120
LCS Dup (B9F2427-BSD1)						
Total Suspended Solids	51.0	5.0	mg/L	50	102	80-120
Duplicate (B9F2427-DUP1)						
Total Suspended Solids	<5.0	5.0	mg/L			

Source: 9F18014-01 Prepared & Analyzed: 06/24/19

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LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - WDR Samples

AA Project No: MB874362
Date Received: 06/19/19
Date Reported: 07/02/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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General Chemistry Analyses - Quality Control

Batch B9F2427 - NO PREP

Duplicate (B9F2427-DUP2)

Source: 9F20002-13 Prepared & Analyzed: 06/24/19

Total Suspended Solids	31500	5.0	mg/L	32900		4.34	20
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Batch B9F2623 - NO PREP

Blank (B9F2623-BLK1)

Prepared & Analyzed: 06/26/19

Chemical Oxygen Demand	<7.0	7.0	mg/L				
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LCS (B9F2623-BS1)

Prepared & Analyzed: 06/26/19

Chemical Oxygen Demand	54.4	7.0	mg/L	50	109	80-120		
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LCS Dup (B9F2623-BSD1)

Prepared & Analyzed: 06/26/19

Chemical Oxygen Demand	60.2	7.0	mg/L	50	120	80-120	10.0	20
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Duplicate (B9F2623-DUP1)

Source: 9F19016-01 Prepared & Analyzed: 06/26/19

Chemical Oxygen Demand	20.1	7.0	mg/L	22.9		13.3	20
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Batch B9F2712 - NO PREP

Blank (B9F2712-BLK1)

Prepared & Analyzed: 06/26/19

Sulfide	<0.025	0.025	mg/L				
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LCS (B9F2712-BS1)

Prepared & Analyzed: 06/26/19

Sulfide	0.496	0.025	mg/L	0.50	99.2	70-130		20
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LCS Dup (B9F2712-BSD1)

Prepared & Analyzed: 06/26/19

Sulfide	0.486	0.025	mg/L	0.50	97.2	70-130	2.04	20
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Duplicate (B9F2712-DUP1)

Source: 9F19016-01 Prepared & Analyzed: 06/26/19

Sulfide	<0.025	0.025	mg/L	<0.050		20
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Matrix Spike (B9F2712-MS1)

Source: 9F20002-04 Prepared & Analyzed: 06/26/19

Sulfide	0.528	0.025	mg/L	0.50	106	70-130		20
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Matrix Spike Dup (B9F2712-MSD1)

Source: 9F20002-04 Prepared & Analyzed: 06/26/19

Sulfide	0.521	0.025	mg/L	0.50	104	70-130	1.33	20
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VOCs by GC/MS EPA 624 - Quality Control

Batch B9F2416 - EPA 5030B

Blank (B9F2416-BLK1)

Prepared & Analyzed: 06/24/19

Benzene	<0.20	0.20	ug/L				
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Bromodichloromethane	<0.20	0.20	ug/L				
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Bromoform	<0.50	0.50	ug/L				
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LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - WDR Samples

AA Project No: MB874362
Date Received: 06/19/19
Date Reported: 07/02/19

Analyte	Reporting Result	Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD RPD	RPD Limit	Notes
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VOCs by GC/MS EPA 624 - Quality Control

Batch B9F2416 - EPA 5030B

Blank (B9F2416-BLK1) Continued

Prepared & Analyzed: 06/24/19

Bromomethane	<0.50	0.50	ug/L
Carbon Tetrachloride	<0.30	0.30	ug/L
Chlorobenzene	<0.30	0.30	ug/L
Chloroethane	<0.50	0.50	ug/L
2-Chloroethyl Vinyl Ether	<6.0	6.0	ug/L
Chloroform	<0.30	0.30	ug/L
Chloromethane	<0.40	0.40	ug/L
Dibromochloromethane	<0.30	0.30	ug/L
1,2-Dichlorobenzene	<0.30	0.30	ug/L
1,4-Dichlorobenzene	<0.30	0.30	ug/L
1,3-Dichlorobenzene	<0.10	0.10	ug/L
1,1-Dichloroethane	<0.20	0.20	ug/L
1,2-Dichloroethane (EDC)	<0.30	0.30	ug/L
trans-1,2-Dichloroethylene	<0.40	0.40	ug/L
1,1-Dichloroethylene	<0.30	0.30	ug/L
1,2-Dichloropropane	<0.50	0.50	ug/L
cis-1,3-Dichloropropylene	<0.20	0.20	ug/L
trans-1,3-Dichloropropylene	<0.20	0.20	ug/L
Ethylbenzene	<0.20	0.20	ug/L
Methylene Chloride	<5.0	5.0	ug/L
1,1,2,2-Tetrachloroethane	<0.30	0.30	ug/L
Tetrachloroethylene (PCE)	<0.50	0.50	ug/L
Toluene	<0.30	0.30	ug/L
1,1,2-Trichloroethane	<0.30	0.30	ug/L
1,1,1-Trichloroethane	<0.30	0.30	ug/L
Trichloroethylene (TCE)	<0.20	0.20	ug/L
Vinyl chloride	<0.50	0.50	ug/L

Surrogate: 4-Bromofluorobenzene	47.1	ug/L	50	94.3	70-140
Surrogate: Dibromofluoromethane	50.7	ug/L	50	101	70-140
Surrogate: Toluene-d8	47.6	ug/L	50	95.2	70-140

LCS (B9F2416-BS1)

Prepared & Analyzed: 06/24/19

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LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - WDR Samples

AA Project No: MB874362
Date Received: 06/19/19
Date Reported: 07/02/19

Analyte	Reporting Result	Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD RPD	RPD Limit	Notes
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VOCs by GC/MS EPA 624 - Quality Control

Batch B9F2416 - EPA 5030B

LCS (B9F2416-BS1) Continued

Prepared & Analyzed: 06/24/19

Benzene	17.8	0.20	ug/L	20	88.8	75-125				
Bromodichloromethane	22.4	0.20	ug/L	20	112	75-125				
Bromoform	21.3	0.50	ug/L	20	107	75-125				
Bromomethane	17.1	0.50	ug/L	20	85.4	75-125				
Carbon Tetrachloride	22.5	0.30	ug/L	20	112	75-125				
Chlorobenzene	20.7	0.30	ug/L	20	103	75-125				
Chloroethane	41.1	0.50	ug/L	20	205	75-125				**
2-Chloroethyl Vinyl Ether	18.7	6.0	ug/L	20	93.4	70-130				
Chloroform	20.8	0.30	ug/L	20	104	75-125				
Chloromethane	20.6	0.40	ug/L	20	103	65-125				
Dibromochloromethane	22.4	0.30	ug/L	20	112	75-125				
1,2-Dichlorobenzene	20.9	0.30	ug/L	20	105	70-130				
1,4-Dichlorobenzene	19.8	0.30	ug/L	20	99.0	75-125				
1,3-Dichlorobenzene	20.4	0.10	ug/L	20	102	70-130				
1,1-Dichloroethane	21.3	0.20	ug/L	20	106	70-125				
1,2-Dichloroethane (EDC)	23.2	0.30	ug/L	20	116	75-125				
trans-1,2-Dichloroethylene	20.9	0.40	ug/L	20	104	75-125				
1,1-Dichloroethylene	20.4	0.30	ug/L	20	102	70-130				
1,2-Dichloropropane	21.5	0.50	ug/L	20	108	75-130				
cis-1,3-Dichloropropylene	21.9	0.20	ug/L	20	109	75-125				
trans-1,3-Dichloropropylene	22.6	0.20	ug/L	20	113	70-130				
Ethylbenzene	21.4	0.20	ug/L	20	107	75-125				
Methylene Chloride	28.6	5.0	ug/L	20	143	75-130				**
1,1,2,2-Tetrachloroethane	24.1	0.30	ug/L	20	121	70-135				
Tetrachloroethylene (PCE)	20.6	0.50	ug/L	20	103	75-125				
Toluene	20.8	0.30	ug/L	20	104	75-125				
1,1,2-Trichloroethane	22.5	0.30	ug/L	20	113	75-125				
1,1,1-Trichloroethane	22.3	0.30	ug/L	20	111	75-125				
Trichloroethylene (TCE)	21.5	0.20	ug/L	20	108	75-125				
Vinyl chloride	21.0	0.50	ug/L	20	105	75-125				
Surrogate: 4-Bromofluorobenzene	47.6		ug/L	50	95.2	70-140				

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LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - WDR Samples

AA Project No: MB874362
Date Received: 06/19/19
Date Reported: 07/02/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD RPD	RPD Limit	Notes
VOCs by GC/MS EPA 624 - Quality Control										
<i>Batch B9F2416 - EPA 5030B</i>										
LCS (B9F2416-BS1) Continued Prepared & Analyzed: 06/24/19										
Surrogate: Dibromofluoromethane	48.7		ug/L	50	97.4	70-140				
Surrogate: Toluene-d8	48.1		ug/L	50	96.1	70-140				
LCS Dup (B9F2416-BSD1) Prepared: 06/24/19 Analyzed: 06/25/19										
Benzene	16.3	0.20	ug/L	20	81.5	75-125	8.57	30		
Bromodichloromethane	20.6	0.20	ug/L	20	103	75-125	8.52	30		
Bromoform	16.1	0.50	ug/L	20	80.6	75-125	27.7	30		
Bromomethane	18.3	0.50	ug/L	20	91.4	75-125	6.73	30		
Carbon Tetrachloride	19.7	0.30	ug/L	20	98.7	75-125	12.9	30		
Chlorobenzene	16.6	0.30	ug/L	20	82.8	75-125	22.1	30		
Chloroethane	46.5	0.50	ug/L	20	232	75-125	12.3	30		**
2-Chloroethyl Vinyl Ether	15.7	6.0	ug/L	20	78.5	70-130	17.3	30		
Chloroform	19.3	0.30	ug/L	20	96.5	75-125	7.29	30		
Chloromethane	22.0	0.40	ug/L	20	110	65-125	6.67	30		
Dibromochloromethane	17.4	0.30	ug/L	20	87.0	75-125	25.0	30		
1,2-Dichlorobenzene	18.7	0.30	ug/L	20	93.6	70-130	11.1	30		
1,4-Dichlorobenzene	18.1	0.30	ug/L	20	90.5	75-125	8.97	30		
1,3-Dichlorobenzene	18.2	0.10	ug/L	20	90.8	70-130	11.4	30		
1,1-Dichloroethane	19.1	0.20	ug/L	20	95.4	70-125	10.9	30		
1,2-Dichloroethane (EDC)	21.4	0.30	ug/L	20	107	75-125	8.34	30		
trans-1,2-Dichloroethylene	19.0	0.40	ug/L	20	95.0	75-125	9.47	30		
1,1-Dichloroethylene	19.9	0.30	ug/L	20	99.6	70-130	2.38	30		
1,2-Dichloropropane	19.6	0.50	ug/L	20	98.2	75-130	8.99	30		
cis-1,3-Dichloropropylene	19.1	0.20	ug/L	20	95.4	75-125	13.8	30		
trans-1,3-Dichloropropylene	17.5	0.20	ug/L	20	87.6	70-130	25.3	30		
Ethylbenzene	17.5	0.20	ug/L	20	87.3	75-125	20.0	30		
Methylene Chloride	30.3	5.0	ug/L	20	152	75-130	5.63	30		**
1,1,2,2-Tetrachloroethane	19.3	0.30	ug/L	20	96.4	70-135	22.4	30		
Tetrachloroethylene (PCE)	15.9	0.50	ug/L	20	79.3	75-125	26.0	30		
Toluene	16.9	0.30	ug/L	20	84.5	75-125	20.5	30		
1,1,2-Trichloroethane	17.9	0.30	ug/L	20	89.6	75-125	22.7	30		
1,1,1-Trichloroethane	20.2	0.30	ug/L	20	101	75-125	9.69	30		
Trichloroethylene (TCE)	19.8	0.20	ug/L	20	98.8	75-125	8.53	30		

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - WDR Samples

AA Project No: MB874362
Date Received: 06/19/19
Date Reported: 07/02/19

Analyte	Reporting Result	Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD RPD	Limit Notes
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VOCs by GC/MS EPA 624 - Quality Control*Batch B9F2416 - EPA 5030B***LCS Dup (B9F2416-BSD1) Continued***Prepared: 06/24/19 Analyzed: 06/25/19*

Vinyl chloride	24.1	0.50	ug/L	20		120	75-125	13.6	30
Surrogate: 4-Bromofluorobenzene	48.4		ug/L	50		96.8	70-140		
Surrogate: Dibromofluoromethane	49.5		ug/L	50		99.0	70-140		
Surrogate: Toluene-d8	44.3		ug/L	50		88.6	70-140		

Matrix Spike (B9F2416-MS1)*Source: 9F17012-06 Prepared & Analyzed: 06/24/19*

Benzene	18.3	0.20	ug/L	20		91.5	70-130		
Bromodichloromethane	22.6	0.20	ug/L	20		113	70-130		
Bromoform	17.9	0.50	ug/L	20		89.6	70-130		
Bromomethane	21.8	0.50	ug/L	20		109	70-130		
Carbon Tetrachloride	23.0	0.30	ug/L	20		115	70-130		
Chlorobenzene	20.3	0.30	ug/L	20		101	70-130		
Chloroethane	47.1	0.50	ug/L	20		235	70-130		**
Chloroform	22.1	0.30	ug/L	20		110	70-130		
Chloromethane	20.5	0.40	ug/L	20		102	65-130		
Dibromochloromethane	20.4	0.30	ug/L	20		102	70-130		
1,2-Dichlorobenzene	20.4	0.30	ug/L	20		102	70-130		
1,4-Dichlorobenzene	19.8	0.30	ug/L	20		98.8	70-130		
1,3-Dichlorobenzene	19.9	0.10	ug/L	20		99.6	70-130		
1,1-Dichloroethane	22.3	0.20	ug/L	20		112	70-130		
1,2-Dichloroethane (EDC)	23.7	0.30	ug/L	20		118	70-130		
trans-1,2-Dichloroethylene	20.9	0.40	ug/L	20		105	70-130		
1,1-Dichloroethylene	20.2	0.30	ug/L	20		101	70-130		
1,2-Dichloropropane	22.4	0.50	ug/L	20		112	70-130		
cis-1,3-Dichloropropylene	21.0	0.20	ug/L	20		105	70-130		
trans-1,3-Dichloropropylene	20.6	0.20	ug/L	20		103	70-130		
Ethylbenzene	21.6	0.20	ug/L	20		108	70-130		
Methylene Chloride	19.2	5.0	ug/L	20		96.2	70-130		
1,1,2,2-Tetrachloroethane	21.9	0.30	ug/L	20		109	70-130		
Tetrachloroethylene (PCE)	20.1	0.50	ug/L	20		100	70-130		
Toluene	20.4	0.30	ug/L	20		102	70-130		
1,1,2-Trichloroethane	20.7	0.30	ug/L	20		104	70-130		

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LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - WDR Samples

AA Project No: MB874362
Date Received: 06/19/19
Date Reported: 07/02/19

Analyte	Reporting Result	Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD RPD	Limit Notes
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VOCs by GC/MS EPA 624 - Quality Control

Batch B9F2416 - EPA 5030B

Matrix Spike (B9F2416-MS1) Continued Source: 9F17012-06 Prepared & Analyzed: 06/24/19

1,1,1-Trichloroethane	23.3	0.30	ug/L	20	116	70-130			
Trichloroethylene (TCE)	21.9	0.20	ug/L	20	110	70-130			
Vinyl chloride	22.8	0.50	ug/L	20	114	70-130			
<i>Surrogate: 4-Bromofluorobenzene</i>	47.8		ug/L	50	95.5	70-140			
<i>Surrogate: Dibromofluoromethane</i>	49.6		ug/L	50	99.1	70-140			
<i>Surrogate: Toluene-d8</i>	48.1		ug/L	50	96.3	70-140			

Matrix Spike Dup (B9F2416-MSD1) Source: 9F17012-06 Prepared: 06/24/19 Analyzed: 06/25/19

Benzene	17.1	0.20	ug/L	20	85.4	70-130	6.84	30	
Bromodichloromethane	21.6	0.20	ug/L	20	108	70-130	4.66	30	
Bromoform	18.8	0.50	ug/L	20	94.2	70-130	4.90	30	
Bromomethane	18.0	0.50	ug/L	20	89.8	70-130	19.3	30	
Carbon Tetrachloride	21.1	0.30	ug/L	20	106	70-130	8.44	30	
Chlorobenzene	18.5	0.30	ug/L	20	92.4	70-130	9.19	30	
Chloroethane	24.1	0.50	ug/L	20	120	70-130	64.7	30	AA-C1
Chloroform	20.2	0.30	ug/L	20	101	70-130	8.75	30	
Chloromethane	22.5	0.40	ug/L	20	112	65-130	9.31	30	
Dibromochloromethane	20.6	0.30	ug/L	20	103	70-130	0.877	30	
1,2-Dichlorobenzene	19.4	0.30	ug/L	20	97.1	70-130	4.92	30	
1,4-Dichlorobenzene	18.5	0.30	ug/L	20	92.3	70-130	6.85	30	
1,3-Dichlorobenzene	18.4	0.10	ug/L	20	92.2	70-130	7.72	30	
1,1-Dichloroethane	20.5	0.20	ug/L	20	102	70-130	8.74	30	
1,2-Dichloroethane (EDC)	23.0	0.30	ug/L	20	115	70-130	2.78	30	
trans-1,2-Dichloroethylene	19.3	0.40	ug/L	20	96.5	70-130	8.10	30	
1,1-Dichloroethylene	20.6	0.30	ug/L	20	103	70-130	2.30	30	
1,2-Dichloropropane	20.6	0.50	ug/L	20	103	70-130	8.14	30	
cis-1,3-Dichloropropylene	20.5	0.20	ug/L	20	102	70-130	2.55	30	
trans-1,3-Dichloropropylene	20.4	0.20	ug/L	20	102	70-130	1.32	30	
Ethylbenzene	19.2	0.20	ug/L	20	96.0	70-130	11.7	30	
Methylene Chloride	19.6	5.0	ug/L	20	98.0	70-130	1.91	30	
1,1,2,2-Tetrachloroethane	23.7	0.30	ug/L	20	119	70-130	8.25	30	
Tetrachloroethylene (PCE)	17.7	0.50	ug/L	20	88.6	70-130	12.6	30	

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - WDR Samples

AA Project No: MB874362
Date Received: 06/19/19
Date Reported: 07/02/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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VOCs by GC/MS EPA 624 - Quality Control

Batch B9F2416 - EPA 5030B

Matrix Spike Dup (B9F2416-MSD1)

Source: 9F17012-06 Prepared: 06/24/19 Analyzed: 06/25/19

Continued

Toluene	18.5	0.30	ug/L	20	92.4	70-130	9.97	30
1,1,2-Trichloroethane	20.6	0.30	ug/L	20	103	70-130	0.242	30
1,1,1-Trichloroethane	21.4	0.30	ug/L	20	107	70-130	8.38	30
Trichloroethylene (TCE)	20.4	0.20	ug/L	20	102	70-130	7.03	30
Vinyl chloride	21.9	0.50	ug/L	20	109	70-130	3.94	30
Surrogate: 4-Bromofluorobenzene	48.5		ug/L	50	97.0	70-140		
Surrogate: Dibromofluoromethane	51.0		ug/L	50	102	70-140		
Surrogate: Toluene-d8	48.3		ug/L	50	96.6	70-140		


Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - WDR Samples

AA Project No: MB874362
Date Received: 06/19/19
Date Reported: 07/02/19

Special Notes

[1] = ** : Exceeds upper control limit.

[2] = AA-C1 : Exceeds RPD limit.

J : Detected but below the Method Reporting Limit (MRL) / Limit of Quantitation (LOQ); therefore, result is an estimated concentration (CLP J-Flag).

Viorel Vasile
Operations Manager

ATTACHMENT D

Performance Evaluation Analytical Report



9765 Eton Avenue
Chatsworth
California 91311
Tel: (818) 998-5547
Fax: (818) 998-7258

June 24, 2019

Peter Bennett
Haley & Aldrich (Oakland)
1956 Webster St., Suite 450
Oakland, CA 94612

Re : Cooper Drum - South Gate / 130072-024
A874356 / 9F12015

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received on 06/12/19 16:17 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Program Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report or require additional information please call me at American Analytics.

Sincerely,

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
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TO-15 (Mid Level)ppbv

VP-05A-061219-0001	9F12015-01	Vapor	5	06/12/19 11:05	06/12/19 16:17
VP-07C-061219-0001	9F12015-02	Vapor	5	06/12/19 11:20	06/12/19 16:17
VP-09D-061219-0001	9F12015-03	Vapor	5	06/12/19 11:40	06/12/19 16:17
VP-10B-061219-0001	9F12015-04	Vapor	5	06/12/19 10:30	06/12/19 16:17
VP-13B-061219-0001	9F12015-05	Vapor	5	06/12/19 10:00	06/12/19 16:17
VP-14B-061219-0001	9F12015-06	Vapor	5	06/12/19 09:10	06/12/19 16:17
VP-14C-061219-0001	9F12015-07	Vapor	5	06/12/19 08:50	06/12/19 16:17
VP-14D-061219-0001	9F12015-08	Vapor	5	06/12/19 08:30	06/12/19 16:17

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 0.25
Method: VOCs by GCMS EPA TO-15

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19
Sampled: 06/12/19
Prepared: 06/13/19
Analyzed: 06/13/19

VP-05A-061219-0001

9F12015-01 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
Acetone	0.026	ug/L	0.050	11	ppbv	21
Benzene	<0.0024	ug/L	0.0096	<0.75	ppbv	3.0
Benzyl chloride	<0.013	ug/L	0.050	<2.4	ppbv	9.7
Bromodichloromethane	<0.013	ug/L	0.050	<1.9	ppbv	7.5
Bromoform	<0.012	ug/L	0.050	<1.2	ppbv	4.8
Bromomethane	<0.0025	ug/L	0.010	<0.65	ppbv	2.6
2-Butanone (MEK)	<0.013	ug/L	0.050	<4.2	ppbv	17
Carbon Disulfide	<0.012	ug/L	0.050	<4.0	ppbv	16
Carbon Tetrachloride	<0.0033	ug/L	0.013	<0.52	ppbv	2.1
Chlorobenzene	<0.0025	ug/L	0.010	<0.55	ppbv	2.2
Chloroethane	<0.0025	ug/L	0.010	<0.95	ppbv	3.8
Chloroform	0.014	ug/L	0.0098	2.9	ppbv	2.0
Chloromethane	<0.0025	ug/L	0.0099	<1.2	ppbv	4.8
Dibromochloromethane	<0.0049	ug/L	0.020	<0.58	ppbv	2.3
1,2-Dibromoethane (EDB)	<0.005	ug/L	0.020	<0.65	ppbv	2.6
1,2-Dichlorobenzene	0.0091	ug/L	0.020	1.5	ppbv	3.3
1,3-Dichlorobenzene	0.028	ug/L	0.020	4.7	ppbv	3.3
1,4-Dichlorobenzene	0.044	ug/L	0.020	7.3	ppbv	3.3
Dichlorodifluoromethane (R12)	<0.012	ug/L	0.049	<2.5	ppbv	10
1,1-Dichloroethane	0.22 **c	ug/L	0.0081	55 **c	ppbv	2.0
1,2-Dichloroethane (EDC)	<0.0025	ug/L	0.010	<0.62	ppbv	2.5

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 0.25
Method: VOCs by GCMS EPA TO-15

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19
Sampled: 06/12/19
Prepared: 06/13/19
Analyzed: 06/13/19

VP-05A-061219-0001

9F12015-01 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
cis-1,2-Dichloroethylene	0.020	ug/L	0.0079	5.1	ppbv	2.0
1,1-Dichloroethylene	<0.002	ug/L	0.0079	<0.50	ppbv	2.0
trans-1,2-Dichloroethylene	0.085	ug/L	0.0079	21	ppbv	2.0
1,2-Dichloropropane	0.015	ug/L	0.010	3.3	ppbv	2.2
trans-1,3-Dichloropropylene	<0.0025	ug/L	0.01	<0.55	ppbv	2.2
cis-1,3-Dichloropropylene	<0.0025	ug/L	0.01	<0.55	ppbv	2.2
Dichlorotetrafluoroethane	<0.013	ug/L	0.050	<1.8	ppbv	7.2
1,4-Dioxane	<0.0025	ug/L	0.010	<0.70	ppbv	2.8
Ethylbenzene	0.0082	ug/L	0.01	1.9	ppbv	2.3
4-Ethyltoluene	<0.0025	ug/L	0.0098	<0.50	ppbv	2.0
Hexachlorobutadiene	<0.013	ug/L	0.050	<1.2	ppbv	4.7
2-Hexanone (MBK)	<0.012	ug/L	0.049	<3.0	ppbv	12
Isopropanol (IPA)	<0.025	ug/L	0.10	<10	ppbv	41
Methyl-tert-Butyl Ether (MTBE)	<0.0025	ug/L	0.010	<0.70	ppbv	2.8
Methylene Chloride	<0.012	ug/L	0.049	<3.5	ppbv	14
4-Methyl-2-pentanone (MIBK)	<0.012	ug/L	0.049	<3.0	ppbv	12
Styrene	0.0053	ug/L	0.0098	1.3	ppbv	2.3
1,1,2,2-Tetrachloroethane	<0.013	ug/L	0.050	<1.8	ppbv	7.3
Tetrachloroethylene (PCE)	2.1 **c	ug/L	0.014	320 **c	ppbv	2.0
Toluene	0.019	ug/L	0.049	5.0	ppbv	13
1,2,4-Trichlorobenzene	0.020	ug/L	0.020	2.7	ppbv	2.7

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 0.25
Method: VOCs by GCMS EPA TO-15

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19
Sampled: 06/12/19
Prepared: 06/13/19
Analyzed: 06/13/19

VP-05A-061219-0001

9F12015-01 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
1,1,2-Trichloroethane	<0.005	ug/L	0.020	<0.92	ppbv	3.7
1,1,1-Trichloroethane	0.018	ug/L	0.020	3.4	ppbv	3.7
Trichloroethylene (TCE)	0.26 **c	ug/L	0.011	49 **c	ppbv	2.0
Trichlorofluoromethane (R11)	<0.013	ug/L	0.050	<2.2	ppbv	8.9
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	0.016	ug/L	0.050	2.0	ppbv	6.5
1,3,5-Trimethylbenzene	<0.0025	ug/L	0.0098	<0.50	ppbv	2.0
1,2,4-Trimethylbenzene	0.0058	ug/L	0.0098	1.2	ppbv	2.0
Vinyl acetate	<0.0025	ug/L	0.0099	<0.70	ppbv	2.8
Vinyl chloride	<0.0025	ug/L	0.01	<0.98	ppbv	3.9
o-Xylene	0.017	ug/L	0.01	4.0	ppbv	2.3
m,p-Xylenes	0.032	ug/L	0.01	7.4	ppbv	2.3
1,2,3-Trichloropropane	<0.003	ug/L	0.012	<0.50	ppbv	2.0
Surrogates	%REC	%REC Limits				
4-Bromofluorobenzene	109 %	70-130				

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client:	Haley & Aldrich (Oakland)	AA Project No:	A874356
Project No:	130072-024	Date Received:	06/12/19
Project Name:	Cooper Drum - South Gate	Date Reported:	06/24/19
Matrix:	Vapor	Sampled:	06/12/19
Dilution:	0.25	Prepared:	06/13/19
Method:	VOCs by GCMS EPA TO-15	Analyzed:	06/13/19

VP-07C-061219-0001

9F12015-02 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
Acetone	0.021	ug/L	0.050	8.8	ppbv	21
Benzene	<0.0024	ug/L	0.0096	<0.75	ppbv	3.0
Benzyl chloride	<0.013	ug/L	0.050	<2.4	ppbv	9.7
Bromodichloromethane	<0.013	ug/L	0.050	<1.9	ppbv	7.5
Bromoform	<0.012	ug/L	0.050	<1.2	ppbv	4.8
Bromomethane	<0.0025	ug/L	0.010	<0.65	ppbv	2.6
2-Butanone (MEK)	<0.013	ug/L	0.050	<4.2	ppbv	17
Carbon Disulfide	<0.012	ug/L	0.050	<4.0	ppbv	16
Carbon Tetrachloride	<0.0033	ug/L	0.013	<0.52	ppbv	2.1
Chlorobenzene	0.0064	ug/L	0.010	1.4	ppbv	2.2
Chloroethane	<0.0025	ug/L	0.010	<0.95	ppbv	3.8
Chloroform	0.0068	ug/L	0.0098	1.4	ppbv	2.0
Chloromethane	<0.0025	ug/L	0.0099	<1.2	ppbv	4.8
Dibromochloromethane	<0.0049	ug/L	0.020	<0.58	ppbv	2.3
1,2-Dibromoethane (EDB)	<0.005	ug/L	0.020	<0.65	ppbv	2.6
1,2-Dichlorobenzene	0.048	ug/L	0.020	8.0	ppbv	3.3
1,3-Dichlorobenzene	<0.005	ug/L	0.020	<0.82	ppbv	3.3
1,4-Dichlorobenzene	0.0051	ug/L	0.020	0.84	ppbv	3.3
Dichlorodifluoromethane (R12)	<0.012	ug/L	0.049	<2.5	ppbv	10
1,1-Dichloroethane	0.012	ug/L	0.0081	3.0	ppbv	2.0
1,2-Dichloroethane (EDC)	<0.0025	ug/L	0.010	<0.62	ppbv	2.5

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 0.25
Method: VOCs by GCMS EPA TO-15

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19
Sampled: 06/12/19
Prepared: 06/13/19
Analyzed: 06/13/19

VP-07C-061219-0001

9F12015-02 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
cis-1,2-Dichloroethylene	0.019	ug/L	0.0079	4.8	ppbv	2.0
1,1-Dichloroethylene	0.0024	ug/L	0.0079	0.60	ppbv	2.0
trans-1,2-Dichloroethylene	<0.002	ug/L	0.0079	<0.50	ppbv	2.0
1,2-Dichloropropane	<0.0025	ug/L	0.010	<0.55	ppbv	2.2
trans-1,3-Dichloropropylene	<0.0025	ug/L	0.01	<0.55	ppbv	2.2
cis-1,3-Dichloropropylene	<0.0025	ug/L	0.01	<0.55	ppbv	2.2
Dichlorotetrafluoroethane	<0.013	ug/L	0.050	<1.8	ppbv	7.2
1,4-Dioxane	<0.0025	ug/L	0.010	<0.70	ppbv	2.8
Ethylbenzene	0.0052	ug/L	0.01	1.2	ppbv	2.3
4-Ethyltoluene	<0.0025	ug/L	0.0098	<0.50	ppbv	2.0
Hexachlorobutadiene	<0.013	ug/L	0.050	<1.2	ppbv	4.7
2-Hexanone (MBK)	<0.012	ug/L	0.049	<3.0	ppbv	12
Isopropanol (IPA)	<0.025	ug/L	0.10	<10	ppbv	41
Methyl-tert-Butyl Ether (MTBE)	<0.0025	ug/L	0.010	<0.70	ppbv	2.8
Methylene Chloride	<0.012	ug/L	0.049	<3.5	ppbv	14
4-Methyl-2-pentanone (MIBK)	<0.012	ug/L	0.049	<3.0	ppbv	12
Styrene	0.0034	ug/L	0.0098	0.80	ppbv	2.3
1,1,2,2-Tetrachloroethane	<0.013	ug/L	0.050	<1.8	ppbv	7.3
Tetrachloroethylene (PCE)	0.15	ug/L	0.014	23	ppbv	2.0
Toluene	0.013	ug/L	0.049	3.4	ppbv	13
1,2,4-Trichlorobenzene	<0.005	ug/L	0.020	<0.68	ppbv	2.7

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 0.25
Method: VOCs by GCMS EPA TO-15

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19
Sampled: 06/12/19
Prepared: 06/13/19
Analyzed: 06/13/19

VP-07C-061219-0001

9F12015-02 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
1,1,2-Trichloroethane	<0.005	ug/L	0.020	<0.92	ppbv	3.7
1,1,1-Trichloroethane	<0.005	ug/L	0.020	<0.92	ppbv	3.7
Trichloroethylene (TCE)	0.25 **	ug/L	0.011	46 **	ppbv	2.0
Trichlorofluoromethane (R11)	<0.013	ug/L	0.050	<2.2	ppbv	8.9
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.012	ug/L	0.050	<1.6	ppbv	6.5
1,3,5-Trimethylbenzene	<0.0025	ug/L	0.0098	<0.50	ppbv	2.0
1,2,4-Trimethylbenzene	0.0046	ug/L	0.0098	0.93	ppbv	2.0
Vinyl acetate	<0.0025	ug/L	0.0099	<0.70	ppbv	2.8
Vinyl chloride	<0.0025	ug/L	0.01	<0.98	ppbv	3.9
o-Xylene	0.011	ug/L	0.01	2.5	ppbv	2.3
m,p-Xylenes	0.020	ug/L	0.01	4.7	ppbv	2.3
1,2,3-Trichloropropane	<0.003	ug/L	0.012	<0.50	ppbv	2.0
Surrogates		%REC		%REC Limits		
4-Bromofluorobenzene		106 %		70-130		

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 0.25
Method: VOCs by GCMS EPA TO-15

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19
Sampled: 06/12/19
Prepared: 06/13/19
Analyzed: 06/13/19

VP-09D-061219-0001

9F12015-03 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
Acetone	0.021	ug/L	0.050	8.8	ppbv	21
Benzene	<0.0024	ug/L	0.0096	<0.75	ppbv	3.0
Benzyl chloride	<0.013	ug/L	0.050	<2.4	ppbv	9.7
Bromodichloromethane	<0.013	ug/L	0.050	<1.9	ppbv	7.5
Bromoform	<0.012	ug/L	0.050	<1.2	ppbv	4.8
Bromomethane	<0.0025	ug/L	0.010	<0.65	ppbv	2.6
2-Butanone (MEK)	<0.013	ug/L	0.050	<4.2	ppbv	17
Carbon Disulfide	<0.012	ug/L	0.050	<4.0	ppbv	16
Carbon Tetrachloride	<0.0033	ug/L	0.013	<0.52	ppbv	2.1
Chlorobenzene	<0.0025	ug/L	0.010	<0.55	ppbv	2.2
Chloroethane	<0.0025	ug/L	0.010	<0.95	ppbv	3.8
Chloroform	0.003	ug/L	0.0098	0.60	ppbv	2.0
Chloromethane	<0.0025	ug/L	0.0099	<1.2	ppbv	4.8
Dibromochloromethane	<0.0049	ug/L	0.020	<0.58	ppbv	2.3
1,2-Dibromoethane (EDB)	<0.005	ug/L	0.020	<0.65	ppbv	2.6
1,2-Dichlorobenzene	<0.005	ug/L	0.020	<0.82	ppbv	3.3
1,3-Dichlorobenzene	<0.005	ug/L	0.020	<0.82	ppbv	3.3
1,4-Dichlorobenzene	<0.005	ug/L	0.020	<0.82	ppbv	3.3
Dichlorodifluoromethane (R12)	<0.012	ug/L	0.049	<2.5	ppbv	10
1,1-Dichloroethane	0.025	ug/L	0.0081	6.1	ppbv	2.0
1,2-Dichloroethane (EDC)	<0.0025	ug/L	0.010	<0.62	ppbv	2.5

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 1
Method: VOCs by GCMS EPA TO-15

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19
Sampled: 06/12/19
Prepared: 06/13/19
Analyzed: 06/14/19

VP-09D-061219-0001

9F12015-03 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
cis-1,2-Dichloroethylene	0.094 **	ug/L	0.0079	24 **	ppbv	2.0
1,1-Dichloroethylene	0.0032	ug/L	0.0079	0.82	ppbv	2.0
trans-1,2-Dichloroethylene	0.018	ug/L	0.0079	4.4	ppbv	2.0
1,2-Dichloropropane	<0.0025	ug/L	0.010	<0.55	ppbv	2.2
trans-1,3-Dichloropropylene	<0.0025	ug/L	0.01	<0.55	ppbv	2.2
cis-1,3-Dichloropropylene	<0.0025	ug/L	0.01	<0.55	ppbv	2.2
Dichlorotetrafluoroethane	<0.013	ug/L	0.050	<1.8	ppbv	7.2
1,4-Dioxane	<0.0025	ug/L	0.010	<0.70	ppbv	2.8
Ethylbenzene	<0.0025	ug/L	0.01	<0.58	ppbv	2.3
4-Ethyltoluene	<0.0025	ug/L	0.0098	<0.50	ppbv	2.0
Hexachlorobutadiene	<0.013	ug/L	0.050	<1.2	ppbv	4.7
2-Hexanone (MBK)	<0.012	ug/L	0.049	<3.0	ppbv	12
Isopropanol (IPA)	<0.025	ug/L	0.10	<10	ppbv	41
Methyl-tert-Butyl Ether (MTBE)	<0.0025	ug/L	0.010	<0.70	ppbv	2.8
Methylene Chloride	<0.012	ug/L	0.049	<3.5	ppbv	14
4-Methyl-2-pentanone (MIBK)	<0.012	ug/L	0.049	<3.0	ppbv	12
Styrene	<0.0024	ug/L	0.0098	<0.58	ppbv	2.3
1,1,2,2-Tetrachloroethane	<0.013	ug/L	0.050	<1.8	ppbv	7.3
Tetrachloroethylene (PCE)	0.024	ug/L	0.014	3.6	ppbv	2.0
Toluene	<0.012	ug/L	0.049	<3.2	ppbv	13
1,2,4-Trichlorobenzene	<0.005	ug/L	0.020	<0.68	ppbv	2.7

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 0.25
Method: VOCs by GCMS EPA TO-15

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19
Sampled: 06/12/19
Prepared: 06/13/19
Analyzed: 06/13/19

VP-09D-061219-0001

9F12015-03 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
1,1,2-Trichloroethane	<0.005	ug/L	0.020	<0.92	ppbv	3.7
1,1,1-Trichloroethane	<0.005	ug/L	0.020	<0.92	ppbv	3.7
Trichloroethylene (TCE)	0.22 **	ug/L	0.011	41 **	ppbv	2.0
Trichlorofluoromethane (R11)	<0.013	ug/L	0.050	<2.2	ppbv	8.9
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.012	ug/L	0.050	<1.6	ppbv	6.5
1,3,5-Trimethylbenzene	<0.0025	ug/L	0.0098	<0.50	ppbv	2.0
1,2,4-Trimethylbenzene	<0.0025	ug/L	0.0098	<0.50	ppbv	2.0
Vinyl acetate	<0.0025	ug/L	0.0099	<0.70	ppbv	2.8
Vinyl chloride	<0.0025	ug/L	0.01	<0.98	ppbv	3.9
o-Xylene	0.0033	ug/L	0.01	0.77	ppbv	2.3
m,p-Xylenes	0.0063	ug/L	0.01	1.4	ppbv	2.3
1,2,3-Trichloropropane	<0.003	ug/L	0.012	<0.50	ppbv	2.0
Surrogates	%REC	%REC Limits				
4-Bromofluorobenzene	104 %	70-130				


Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client:	Haley & Aldrich (Oakland)	AA Project No:	A874356
Project No:	130072-024	Date Received:	06/12/19
Project Name:	Cooper Drum - South Gate	Date Reported:	06/24/19
Matrix:	Vapor	Sampled:	06/12/19
Dilution:	2	Prepared:	06/13/19
Method:	VOCs by GCMS EPA TO-15	Analyzed:	06/14/19

VP-10B-061219-0001

9F12015-04 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
Acetone	0.20 **b	ug/L	0.050	85 **b	ppbv	21
Benzene	0.015	ug/L	0.0096	4.8	ppbv	3.0
Benzyl chloride	<0.013	ug/L	0.050	<2.4	ppbv	9.7
Bromodichloromethane	<0.013	ug/L	0.050	<1.9	ppbv	7.5
Bromoform	<0.012	ug/L	0.050	<1.2	ppbv	4.8
Bromomethane	<0.0025	ug/L	0.010	<0.65	ppbv	2.6
2-Butanone (MEK)	0.10 E	ug/L	0.050	36 E	ppbv	17
Carbon Disulfide	<0.012	ug/L	0.050	<4.0	ppbv	16
Carbon Tetrachloride	<0.0033	ug/L	0.013	<0.52	ppbv	2.1
Chlorobenzene	0.051	ug/L	0.010	11	ppbv	2.2
Chloroethane	<0.0025	ug/L	0.010	<0.95	ppbv	3.8
Chloroform	<0.0024	ug/L	0.0098	<0.50	ppbv	2.0
Chloromethane	<0.0025	ug/L	0.0099	<1.2	ppbv	4.8
Dibromochloromethane	<0.0049	ug/L	0.020	<0.58	ppbv	2.3
1,2-Dibromoethane (EDB)	<0.005	ug/L	0.020	<0.65	ppbv	2.6
1,2-Dichlorobenzene	0.013	ug/L	0.020	2.2	ppbv	3.3
1,3-Dichlorobenzene	<0.005	ug/L	0.020	<0.82	ppbv	3.3
1,4-Dichlorobenzene	<0.005	ug/L	0.020	<0.82	ppbv	3.3
Dichlorodifluoromethane (R12)	<0.012	ug/L	0.049	<2.5	ppbv	10
1,1-Dichloroethane	0.061	ug/L	0.0081	15	ppbv	2.0
1,2-Dichloroethane (EDC)	<0.0025	ug/L	0.010	<0.62	ppbv	2.5

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 2
Method: VOCs by GCMS EPA TO-15

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19
Sampled: 06/12/19
Prepared: 06/13/19
Analyzed: 06/14/19

VP-10B-061219-0001

9F12015-04 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
cis-1,2-Dichloroethylene	0.12 **b	ug/L	0.0079	30 **b	ppbv	2.0
1,1-Dichloroethylene	0.029	ug/L	0.0079	7.3	ppbv	2.0
trans-1,2-Dichloroethylene	0.035	ug/L	0.0079	8.9	ppbv	2.0
1,2-Dichloropropane	0.0033	ug/L	0.010	0.72	ppbv	2.2
trans-1,3-Dichloropropylene	<0.0025	ug/L	0.01	<0.55	ppbv	2.2
cis-1,3-Dichloropropylene	<0.0025	ug/L	0.01	<0.55	ppbv	2.2
Dichlorotetrafluoroethane	<0.013	ug/L	0.050	<1.8	ppbv	7.2
1,4-Dioxane	<0.0025	ug/L	0.010	<0.70	ppbv	2.8
Ethylbenzene	0.13 **b	ug/L	0.01	31 **b	ppbv	2.3
4-Ethyltoluene	0.015	ug/L	0.0098	3.0	ppbv	2.0
Hexachlorobutadiene	<0.013	ug/L	0.050	<1.2	ppbv	4.7
2-Hexanone (MBK)	<0.012	ug/L	0.049	<3.0	ppbv	12
Isopropanol (IPA)	0.11 E	ug/L	0.10	45 E	ppbv	41
Methyl-tert-Butyl Ether (MTBE)	<0.0025	ug/L	0.010	<0.70	ppbv	2.8
Methylene Chloride	<0.012	ug/L	0.049	<3.5	ppbv	14
4-Methyl-2-pentanone (MIBK)	0.19 **b	ug/L	0.049	47 **b	ppbv	12
Styrene	0.10	ug/L	0.0098	24	ppbv	2.3
1,1,2,2-Tetrachloroethane	<0.013	ug/L	0.050	<1.8	ppbv	7.3
Tetrachloroethylene (PCE)	0.25 **b	ug/L	0.014	37 **b	ppbv	2.0
Toluene	0.48 **b	ug/L	0.049	130 **b	ppbv	13
1,2,4-Trichlorobenzene	<0.005	ug/L	0.020	<0.68	ppbv	2.7

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client:	Haley & Aldrich (Oakland)	AA Project No:	A874356
Project No:	130072-024	Date Received:	06/12/19
Project Name:	Cooper Drum - South Gate	Date Reported:	06/24/19
Matrix:	Vapor	Sampled:	06/12/19
Dilution:	0.25	Prepared:	06/13/19
Method:	VOCs by GCMS EPA TO-15	Analyzed:	06/13/19

VP-10B-061219-0001

9F12015-04 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
1,1,2-Trichloroethane	<0.005	ug/L	0.020	<0.92	ppbv	3.7
1,1,1-Trichloroethane	<0.005	ug/L	0.020	<0.92	ppbv	3.7
Trichloroethylene (TCE)	0.17 **b	ug/L	0.011	32 **b	ppbv	2.0
Trichlorofluoromethane (R11)	<0.013	ug/L	0.050	<2.2	ppbv	8.9
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.012	ug/L	0.050	<1.6	ppbv	6.5
1,3,5-Trimethylbenzene	0.024	ug/L	0.0098	4.9	ppbv	2.0
1,2,4-Trimethylbenzene	0.050	ug/L	0.0098	10	ppbv	2.0
Vinyl acetate	<0.0025	ug/L	0.0099	<0.70	ppbv	2.8
Vinyl chloride	0.019	ug/L	0.01	7.4	ppbv	3.9
o-Xylene	0.20 **b	ug/L	0.01	45 **b	ppbv	2.3
m,p-Xylenes	0.40 **b	ug/L	0.01	93 **b	ppbv	2.3
1,2,3-Trichloropropane	<0.003	ug/L	0.012	<0.50	ppbv	2.0
Surrogates		%REC			%REC Limits	
4-Bromofluorobenzene		122 %			70-130	



Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client:	Haley & Aldrich (Oakland)	AA Project No:	A874356
Project No:	130072-024	Date Received:	06/12/19
Project Name:	Cooper Drum - South Gate	Date Reported:	06/24/19
Matrix:	Vapor	Sampled:	06/12/19
Dilution:	10	Prepared:	06/13/19
Method:	VOCs by GCMS EPA TO-15	Analyzed:	06/14/19

VP-13B-061219-0001

9F12015-05 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
Acetone	0.55 **a	ug/L	0.050	230 **a	ppbv	21
Benzene	0.034	ug/L	0.0096	11	ppbv	3.0
Benzyl chloride	<0.013	ug/L	0.050	<2.4	ppbv	9.7
Bromodichloromethane	<0.013	ug/L	0.050	<1.9	ppbv	7.5
Bromoform	<0.012	ug/L	0.050	<1.2	ppbv	4.8
Bromomethane	<0.0025	ug/L	0.010	<0.65	ppbv	2.6
2-Butanone (MEK)	0.062	ug/L	0.050	21	ppbv	17
Carbon Disulfide	0.017	ug/L	0.050	5.5	ppbv	16
Carbon Tetrachloride	<0.0033	ug/L	0.013	<0.52	ppbv	2.1
Chlorobenzene	<0.0025	ug/L	0.010	<0.55	ppbv	2.2
Chloroethane	<0.0025	ug/L	0.010	<0.95	ppbv	3.8
Chloroform	<0.0024	ug/L	0.0098	<0.50	ppbv	2.0
Chloromethane	<0.0025	ug/L	0.0099	<1.2	ppbv	4.8
Dibromochloromethane	<0.0049	ug/L	0.020	<0.58	ppbv	2.3
1,2-Dibromoethane (EDB)	<0.005	ug/L	0.020	<0.65	ppbv	2.6
1,2-Dichlorobenzene	0.065	ug/L	0.020	11	ppbv	3.3
1,3-Dichlorobenzene	<0.005	ug/L	0.020	<0.82	ppbv	3.3
1,4-Dichlorobenzene	<0.005	ug/L	0.020	<0.82	ppbv	3.3
Dichlorodifluoromethane (R12)	<0.012	ug/L	0.049	<2.5	ppbv	10
1,1-Dichloroethane	<0.002	ug/L	0.0081	<0.50	ppbv	2.0
1,2-Dichloroethane (EDC)	<0.0025	ug/L	0.010	<0.62	ppbv	2.5

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 0.25
Method: VOCs by GCMS EPA TO-15

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19
Sampled: 06/12/19
Prepared: 06/13/19
Analyzed: 06/13/19

VP-13B-061219-0001

9F12015-05 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
cis-1,2-Dichloroethylene	<0.002	ug/L	0.0079	<0.50	ppbv	2.0
1,1-Dichloroethylene	<0.002	ug/L	0.0079	<0.50	ppbv	2.0
trans-1,2-Dichloroethylene	<0.002	ug/L	0.0079	<0.50	ppbv	2.0
1,2-Dichloropropane	<0.0025	ug/L	0.010	<0.55	ppbv	2.2
trans-1,3-Dichloropropylene	<0.0025	ug/L	0.01	<0.55	ppbv	2.2
cis-1,3-Dichloropropylene	<0.0025	ug/L	0.01	<0.55	ppbv	2.2
Dichlorotetrafluoroethane	<0.013	ug/L	0.050	<1.8	ppbv	7.2
1,4-Dioxane	0.84 **a	ug/L	0.010	230 **a	ppbv	2.8
Ethylbenzene	0.16 **a	ug/L	0.01	36 **a	ppbv	2.3
4-Ethyltoluene	0.050	ug/L	0.0098	10	ppbv	2.0
Hexachlorobutadiene	<0.013	ug/L	0.050	<1.2	ppbv	4.7
2-Hexanone (MBK)	<0.012	ug/L	0.049	<3.0	ppbv	12
Isopropanol (IPA)	<0.025	ug/L	0.10	<10	ppbv	41
Methyl-tert-Butyl Ether (MTBE)	<0.0025	ug/L	0.010	<0.70	ppbv	2.8
Methylene Chloride	<0.012	ug/L	0.049	<3.5	ppbv	14
4-Methyl-2-pentanone (MIBK)	0.28 E	ug/L	0.049	69 E	ppbv	12
Styrene	<0.0024	ug/L	0.0098	<0.58	ppbv	2.3
1,1,2,2-Tetrachloroethane	<0.013	ug/L	0.050	<1.8	ppbv	7.3
Tetrachloroethylene (PCE)	0.59 **a	ug/L	0.014	87 **a	ppbv	2.0
Toluene	0.16 E	ug/L	0.049	41 E	ppbv	13
1,2,4-Trichlorobenzene	<0.005	ug/L	0.020	<0.68	ppbv	2.7

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 0.25
Method: VOCs by GCMS EPA TO-15

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19
Sampled: 06/12/19
Prepared: 06/13/19
Analyzed: 06/13/19

VP-13B-061219-0001

9F12015-05 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
1,1,2-Trichloroethane	<0.005	ug/L	0.020	<0.92	ppbv	3.7
1,1,1-Trichloroethane	<0.005	ug/L	0.020	<0.92	ppbv	3.7
Trichloroethylene (TCE)	0.028	ug/L	0.011	5.3	ppbv	2.0
Trichlorofluoromethane (R11)	<0.013	ug/L	0.050	<2.2	ppbv	8.9
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.012	ug/L	0.050	<1.6	ppbv	6.5
1,3,5-Trimethylbenzene	0.073	ug/L	0.0098	15	ppbv	2.0
1,2,4-Trimethylbenzene	0.13 **a	ug/L	0.0098	27 **a	ppbv	2.0
Vinyl acetate	<0.0025	ug/L	0.0099	<0.70	ppbv	2.8
Vinyl chloride	<0.0025	ug/L	0.01	<0.98	ppbv	3.9
o-Xylene	0.33 **a	ug/L	0.01	75 **a	ppbv	2.3
m,p-Xylenes	0.67 **a	ug/L	0.01	150 **a	ppbv	2.3
1,2,3-Trichloropropane	<0.003	ug/L	0.012	<0.50	ppbv	2.0
Surrogates		%REC			%REC Limits	
4-Bromofluorobenzene		122 %			70-130	


Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client:	Haley & Aldrich (Oakland)	AA Project No:	A874356
Project No:	130072-024	Date Received:	06/12/19
Project Name:	Cooper Drum - South Gate	Date Reported:	06/24/19
Matrix:	Vapor	Sampled:	06/12/19
Dilution:	0.25	Prepared:	06/13/19
Method:	VOCs by GCMS EPA TO-15	Analyzed:	06/13/19

VP-14B-061219-0001

9F12015-06 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
Acetone	0.018	ug/L	0.050	7.5	ppbv	21
Benzene	<0.0024	ug/L	0.0096	<0.75	ppbv	3.0
Benzyl chloride	<0.013	ug/L	0.050	<2.4	ppbv	9.7
Bromodichloromethane	<0.013	ug/L	0.050	<1.9	ppbv	7.5
Bromoform	<0.012	ug/L	0.050	<1.2	ppbv	4.8
Bromomethane	<0.0025	ug/L	0.010	<0.65	ppbv	2.6
2-Butanone (MEK)	<0.013	ug/L	0.050	<4.2	ppbv	17
Carbon Disulfide	<0.012	ug/L	0.050	<4.0	ppbv	16
Carbon Tetrachloride	<0.0033	ug/L	0.013	<0.52	ppbv	2.1
Chlorobenzene	<0.0025	ug/L	0.010	<0.55	ppbv	2.2
Chloroethane	<0.0025	ug/L	0.010	<0.95	ppbv	3.8
Chloroform	<0.0024	ug/L	0.0098	<0.50	ppbv	2.0
Chloromethane	<0.0025	ug/L	0.0099	<1.2	ppbv	4.8
Dibromochloromethane	<0.0049	ug/L	0.020	<0.58	ppbv	2.3
1,2-Dibromoethane (EDB)	<0.005	ug/L	0.020	<0.65	ppbv	2.6
1,2-Dichlorobenzene	<0.005	ug/L	0.020	<0.82	ppbv	3.3
1,3-Dichlorobenzene	<0.005	ug/L	0.020	<0.82	ppbv	3.3
1,4-Dichlorobenzene	<0.005	ug/L	0.020	<0.82	ppbv	3.3
Dichlorodifluoromethane (R12)	<0.012	ug/L	0.049	<2.5	ppbv	10
1,1-Dichloroethane	0.0097	ug/L	0.0081	2.4	ppbv	2.0
1,2-Dichloroethane (EDC)	<0.0025	ug/L	0.010	<0.62	ppbv	2.5

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 0.25
Method: VOCs by GCMS EPA TO-15

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19
Sampled: 06/12/19
Prepared: 06/13/19
Analyzed: 06/13/19

VP-14B-061219-0001

9F12015-06 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
cis-1,2-Dichloroethylene	0.0031	ug/L	0.0079	0.78	ppbv	2.0
1,1-Dichloroethylene	<0.002	ug/L	0.0079	<0.50	ppbv	2.0
trans-1,2-Dichloroethylene	<0.002	ug/L	0.0079	<0.50	ppbv	2.0
1,2-Dichloropropane	<0.0025	ug/L	0.010	<0.55	ppbv	2.2
trans-1,3-Dichloropropylene	<0.0025	ug/L	0.01	<0.55	ppbv	2.2
cis-1,3-Dichloropropylene	<0.0025	ug/L	0.01	<0.55	ppbv	2.2
Dichlorotetrafluoroethane	<0.013	ug/L	0.050	<1.8	ppbv	7.2
1,4-Dioxane	<0.0025	ug/L	0.010	<0.70	ppbv	2.8
Ethylbenzene	<0.0025	ug/L	0.01	<0.58	ppbv	2.3
4-Ethyltoluene	<0.0025	ug/L	0.0098	<0.50	ppbv	2.0
Hexachlorobutadiene	<0.013	ug/L	0.050	<1.2	ppbv	4.7
2-Hexanone (MBK)	<0.012	ug/L	0.049	<3.0	ppbv	12
Isopropanol (IPA)	<0.025	ug/L	0.10	<10	ppbv	41
Methyl-tert-Butyl Ether (MTBE)	<0.0025	ug/L	0.010	<0.70	ppbv	2.8
Methylene Chloride	<0.012	ug/L	0.049	<3.5	ppbv	14
4-Methyl-2-pentanone (MIBK)	<0.012	ug/L	0.049	<3.0	ppbv	12
Styrene	<0.0024	ug/L	0.0098	<0.58	ppbv	2.3
1,1,2,2-Tetrachloroethane	<0.013	ug/L	0.050	<1.8	ppbv	7.3
Tetrachloroethylene (PCE)	0.075	ug/L	0.014	11	ppbv	2.0
Toluene	<0.012	ug/L	0.049	<3.2	ppbv	13
1,2,4-Trichlorobenzene	<0.005	ug/L	0.020	<0.68	ppbv	2.7

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 0.25
Method: VOCs by GCMS EPA TO-15

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19
Sampled: 06/12/19
Prepared: 06/13/19
Analyzed: 06/13/19

VP-14B-061219-0001

9F12015-06 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
1,1,2-Trichloroethane	<0.005	ug/L	0.020	<0.92	ppbv	3.7
1,1,1-Trichloroethane	<0.005	ug/L	0.020	<0.92	ppbv	3.7
Trichloroethylene (TCE)	0.0047	ug/L	0.011	0.88	ppbv	2.0
Trichlorofluoromethane (R11)	<0.013	ug/L	0.050	<2.2	ppbv	8.9
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.012	ug/L	0.050	<1.6	ppbv	6.5
1,3,5-Trimethylbenzene	<0.0025	ug/L	0.0098	<0.50	ppbv	2.0
1,2,4-Trimethylbenzene	<0.0025	ug/L	0.0098	<0.50	ppbv	2.0
Vinyl acetate	<0.0025	ug/L	0.0099	<0.70	ppbv	2.8
Vinyl chloride	<0.0025	ug/L	0.01	<0.98	ppbv	3.9
o-Xylene	<0.0025	ug/L	0.01	<0.58	ppbv	2.3
m,p-Xylenes	<0.0025	ug/L	0.01	<0.58	ppbv	2.3
1,2,3-Trichloropropane	<0.003	ug/L	0.012	<0.50	ppbv	2.0
Surrogates	%REC	%REC Limits				
4-Bromofluorobenzene	105 %	70-130				


Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 0.25
Method: VOCs by GCMS EPA TO-15

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19
Sampled: 06/12/19
Prepared: 06/13/19
Analyzed: 06/13/19

VP-14C-061219-0001

9F12015-07 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
Acetone	0.015	ug/L	0.050	6.3	ppbv	21
Benzene	<0.0024	ug/L	0.0096	<0.75	ppbv	3.0
Benzyl chloride	<0.013	ug/L	0.050	<2.4	ppbv	9.7
Bromodichloromethane	<0.013	ug/L	0.050	<1.9	ppbv	7.5
Bromoform	<0.012	ug/L	0.050	<1.2	ppbv	4.8
Bromomethane	<0.0025	ug/L	0.010	<0.65	ppbv	2.6
2-Butanone (MEK)	<0.013	ug/L	0.050	<4.2	ppbv	17
Carbon Disulfide	<0.012	ug/L	0.050	<4.0	ppbv	16
Carbon Tetrachloride	<0.0033	ug/L	0.013	<0.52	ppbv	2.1
Chlorobenzene	<0.0025	ug/L	0.010	<0.55	ppbv	2.2
Chloroethane	<0.0025	ug/L	0.010	<0.95	ppbv	3.8
Chloroform	0.012	ug/L	0.0098	2.5	ppbv	2.0
Chloromethane	0.0031	ug/L	0.0099	1.5	ppbv	4.8
Dibromochloromethane	<0.0049	ug/L	0.020	<0.58	ppbv	2.3
1,2-Dibromoethane (EDB)	<0.005	ug/L	0.020	<0.65	ppbv	2.6
1,2-Dichlorobenzene	<0.005	ug/L	0.020	<0.82	ppbv	3.3
1,3-Dichlorobenzene	<0.005	ug/L	0.020	<0.82	ppbv	3.3
1,4-Dichlorobenzene	<0.005	ug/L	0.020	<0.82	ppbv	3.3
Dichlorodifluoromethane (R12)	<0.012	ug/L	0.049	<2.5	ppbv	10
1,1-Dichloroethane	0.0048	ug/L	0.0081	1.2	ppbv	2.0
1,2-Dichloroethane (EDC)	<0.0025	ug/L	0.010	<0.62	ppbv	2.5

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 0.25
Method: VOCs by GCMS EPA TO-15

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19
Sampled: 06/12/19
Prepared: 06/13/19
Analyzed: 06/13/19

VP-14C-061219-0001

9F12015-07 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
cis-1,2-Dichloroethylene	0.0067	ug/L	0.0079	1.7	ppbv	2.0
1,1-Dichloroethylene	<0.002	ug/L	0.0079	<0.50	ppbv	2.0
trans-1,2-Dichloroethylene	0.0054	ug/L	0.0079	1.4	ppbv	2.0
1,2-Dichloropropane	<0.0025	ug/L	0.010	<0.55	ppbv	2.2
trans-1,3-Dichloropropylene	<0.0025	ug/L	0.01	<0.55	ppbv	2.2
cis-1,3-Dichloropropylene	<0.0025	ug/L	0.01	<0.55	ppbv	2.2
Dichlorotetrafluoroethane	<0.013	ug/L	0.050	<1.8	ppbv	7.2
1,4-Dioxane	0.28 **	ug/L	0.010	77 **	ppbv	2.8
Ethylbenzene	<0.0025	ug/L	0.01	<0.58	ppbv	2.3
4-Ethyltoluene	<0.0025	ug/L	0.0098	<0.50	ppbv	2.0
Hexachlorobutadiene	<0.013	ug/L	0.050	<1.2	ppbv	4.7
2-Hexanone (MBK)	<0.012	ug/L	0.049	<3.0	ppbv	12
Isopropanol (IPA)	<0.025	ug/L	0.10	<10	ppbv	41
Methyl-tert-Butyl Ether (MTBE)	<0.0025	ug/L	0.010	<0.70	ppbv	2.8
Methylene Chloride	<0.012	ug/L	0.049	<3.5	ppbv	14
4-Methyl-2-pentanone (MIBK)	<0.012	ug/L	0.049	<3.0	ppbv	12
Styrene	<0.0024	ug/L	0.0098	<0.58	ppbv	2.3
1,1,2,2-Tetrachloroethane	<0.013	ug/L	0.050	<1.8	ppbv	7.3
Tetrachloroethylene (PCE)	0.21 **	ug/L	0.014	31 **	ppbv	2.0
Toluene	0.013	ug/L	0.049	3.4	ppbv	13
1,2,4-Trichlorobenzene	<0.005	ug/L	0.020	<0.68	ppbv	2.7

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 0.25
Method: VOCs by GCMS EPA TO-15

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19
Sampled: 06/12/19
Prepared: 06/13/19
Analyzed: 06/13/19

VP-14C-061219-0001

9F12015-07 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
1,1,2-Trichloroethane	<0.005	ug/L	0.020	<0.92	ppbv	3.7
1,1,1-Trichloroethane	<0.005	ug/L	0.020	<0.92	ppbv	3.7
Trichloroethylene (TCE)	0.041	ug/L	0.011	7.6	ppbv	2.0
Trichlorofluoromethane (R11)	<0.013	ug/L	0.050	<2.2	ppbv	8.9
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.012	ug/L	0.050	<1.6	ppbv	6.5
1,3,5-Trimethylbenzene	<0.0025	ug/L	0.0098	<0.50	ppbv	2.0
1,2,4-Trimethylbenzene	<0.0025	ug/L	0.0098	<0.50	ppbv	2.0
Vinyl acetate	<0.0025	ug/L	0.0099	<0.70	ppbv	2.8
Vinyl chloride	<0.0025	ug/L	0.01	<0.98	ppbv	3.9
o-Xylene	<0.0025	ug/L	0.01	<0.58	ppbv	2.3
m,p-Xylenes	0.0031	ug/L	0.01	0.70	ppbv	2.3
1,2,3-Trichloropropane	<0.003	ug/L	0.012	<0.50	ppbv	2.0
Surrogates		%REC			%REC Limits	
4-Bromofluorobenzene		112 %				70-130


Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 0.25
Method: VOCs by GCMS EPA TO-15

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19
Sampled: 06/12/19
Prepared: 06/14/19
Analyzed: 06/14/19

VP-14D-061219-0001

9F12015-08 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
Acetone	0.014	ug/L	0.050	6.0	ppbv	21
Benzene	<0.0024	ug/L	0.0096	<0.75	ppbv	3.0
Benzyl chloride	<0.013	ug/L	0.050	<2.4	ppbv	9.7
Bromodichloromethane	<0.013	ug/L	0.050	<1.9	ppbv	7.5
Bromoform	<0.012	ug/L	0.050	<1.2	ppbv	4.8
Bromomethane	<0.0025	ug/L	0.010	<0.65	ppbv	2.6
2-Butanone (MEK)	<0.013	ug/L	0.050	<4.2	ppbv	17
Carbon Disulfide	<0.012	ug/L	0.050	<4.0	ppbv	16
Carbon Tetrachloride	<0.0033	ug/L	0.013	<0.52	ppbv	2.1
Chlorobenzene	<0.0025	ug/L	0.010	<0.55	ppbv	2.2
Chloroethane	<0.0025	ug/L	0.010	<0.95	ppbv	3.8
Chloroform	<0.0024	ug/L	0.0098	<0.50	ppbv	2.0
Chloromethane	<0.0025	ug/L	0.0099	<1.2	ppbv	4.8
Dibromochloromethane	<0.0049	ug/L	0.020	<0.58	ppbv	2.3
1,2-Dibromoethane (EDB)	<0.005	ug/L	0.020	<0.65	ppbv	2.6
1,2-Dichlorobenzene	<0.005	ug/L	0.020	<0.82	ppbv	3.3
1,3-Dichlorobenzene	<0.005	ug/L	0.020	<0.82	ppbv	3.3
1,4-Dichlorobenzene	<0.005	ug/L	0.020	<0.82	ppbv	3.3
Dichlorodifluoromethane (R12)	<0.012	ug/L	0.049	<2.5	ppbv	10
1,1-Dichloroethane	0.0022	ug/L	0.0081	0.56	ppbv	2.0
1,2-Dichloroethane (EDC)	<0.0025	ug/L	0.010	<0.62	ppbv	2.5

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 0.25
Method: VOCs by GCMS EPA TO-15

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19
Sampled: 06/12/19
Prepared: 06/14/19
Analyzed: 06/14/19

VP-14D-061219-0001

9F12015-08 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
cis-1,2-Dichloroethylene	0.014	ug/L	0.0079	3.5	ppbv	2.0
1,1-Dichloroethylene	<0.002	ug/L	0.0079	<0.50	ppbv	2.0
trans-1,2-Dichloroethylene	0.0098	ug/L	0.0079	2.5	ppbv	2.0
1,2-Dichloropropane	<0.0025	ug/L	0.010	<0.55	ppbv	2.2
trans-1,3-Dichloropropylene	<0.0025	ug/L	0.01	<0.55	ppbv	2.2
cis-1,3-Dichloropropylene	<0.0025	ug/L	0.01	<0.55	ppbv	2.2
Dichlorotetrafluoroethane	<0.013	ug/L	0.050	<1.8	ppbv	7.2
1,4-Dioxane	0.43 **b	ug/L	0.010	120 **b	ppbv	2.8
Ethylbenzene	<0.0025	ug/L	0.01	<0.58	ppbv	2.3
4-Ethyltoluene	<0.0025	ug/L	0.0098	<0.50	ppbv	2.0
Hexachlorobutadiene	<0.013	ug/L	0.050	<1.2	ppbv	4.7
2-Hexanone (MBK)	<0.012	ug/L	0.049	<3.0	ppbv	12
Isopropanol (IPA)	<0.025	ug/L	0.10	<10	ppbv	41
Methyl-tert-Butyl Ether (MTBE)	<0.0025	ug/L	0.010	<0.70	ppbv	2.8
Methylene Chloride	<0.012	ug/L	0.049	<3.5	ppbv	14
4-Methyl-2-pentanone (MIBK)	<0.012	ug/L	0.049	<3.0	ppbv	12
Styrene	<0.0024	ug/L	0.0098	<0.58	ppbv	2.3
1,1,2,2-Tetrachloroethane	<0.013	ug/L	0.050	<1.8	ppbv	7.3
Tetrachloroethylene (PCE)	0.33 **b	ug/L	0.014	49 **b	ppbv	2.0
Toluene	<0.012	ug/L	0.049	<3.2	ppbv	13
1,2,4-Trichlorobenzene	<0.005	ug/L	0.020	<0.68	ppbv	2.7

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 0.25
Method: VOCs by GCMS EPA TO-15

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19
Sampled: 06/12/19
Prepared: 06/14/19
Analyzed: 06/14/19

VP-14D-061219-0001

9F12015-08 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
1,1,2-Trichloroethane	<0.005	ug/L	0.020	<0.92	ppbv	3.7
1,1,1-Trichloroethane	<0.005	ug/L	0.020	<0.92	ppbv	3.7
Trichloroethylene (TCE)	0.068	ug/L	0.011	13	ppbv	2.0
Trichlorofluoromethane (R11)	<0.013	ug/L	0.050	<2.2	ppbv	8.9
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.012	ug/L	0.050	<1.6	ppbv	6.5
1,3,5-Trimethylbenzene	<0.0025	ug/L	0.0098	<0.50	ppbv	2.0
1,2,4-Trimethylbenzene	<0.0025	ug/L	0.0098	<0.50	ppbv	2.0
Vinyl acetate	<0.0025	ug/L	0.0099	<0.70	ppbv	2.8
Vinyl chloride	<0.0025	ug/L	0.01	<0.98	ppbv	3.9
o-Xylene	<0.0025	ug/L	0.01	<0.58	ppbv	2.3
m,p-Xylenes	<0.0025	ug/L	0.01	<0.58	ppbv	2.3
1,2,3-Trichloropropane	<0.003	ug/L	0.012	<0.50	ppbv	2.0
Surrogates		%REC			%REC Limits	
4-Bromofluorobenzene		108 %				70-130


Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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VOCs by GCMS EPA TO-15 - Quality Control

Batch B9F1924 - *** DEFAULT PREP ***

Blank (B9F1924-BLK1)

Prepared & Analyzed: 06/13/19

Acetone	<5.2	5.2	ppbv
Benzene	<0.75	0.75	ppbv
Benzyl chloride	<2.4	2.4	ppbv
Bromodichloromethane	<1.9	1.9	ppbv
Bromoform	<1.2	1.2	ppbv
Bromomethane	<0.65	0.65	ppbv
2-Butanone (MEK)	<4.2	4.2	ppbv
Carbon Disulfide	<4.0	4.0	ppbv
Carbon Tetrachloride	<0.52	0.52	ppbv
Chlorobenzene	<0.55	0.55	ppbv
Chloroethane	<0.95	0.95	ppbv
Chloroform	<0.50	0.50	ppbv
Chloromethane	<1.2	1.2	ppbv
Dibromochloromethane	<0.58	0.58	ppbv
1,2-Dibromoethane (EDB)	<0.65	0.65	ppbv
1,2-Dichlorobenzene	<0.82	0.82	ppbv
1,3-Dichlorobenzene	<0.82	0.82	ppbv
1,4-Dichlorobenzene	<0.82	0.82	ppbv
Dichlorodifluoromethane (R12)	<2.5	2.5	ppbv
1,1-Dichloroethane	<0.50	0.50	ppbv
1,2-Dichloroethane (EDC)	<0.62	0.62	ppbv
cis-1,2-Dichloroethylene	<0.50	0.50	ppbv
1,1-Dichloroethylene	<0.50	0.50	ppbv
trans-1,2-Dichloroethylene	<0.50	0.50	ppbv
1,2-Dichloropropane	<0.55	0.55	ppbv
trans-1,3-Dichloropropylene	<0.55	0.55	ppbv
cis-1,3-Dichloropropylene	<0.55	0.55	ppbv
Dichlorotetrafluoroethane	<1.8	1.8	ppbv
1,4-Dioxane	<0.70	0.70	ppbv
Ethylbenzene	<0.58	0.58	ppbv
4-Ethyltoluene	<0.50	0.50	ppbv
Hexachlorobutadiene	<1.2	1.2	ppbv


Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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VOCs by GCMS EPA TO-15 - Quality Control

Batch B9F1924 - *** DEFAULT PREP ***

Blank (B9F1924-BLK1) Continued

Prepared & Analyzed: 06/13/19

2-Hexanone (MBK)	<3.0	3.0	ppbv
Isopropanol (IPA)	<10	10	ppbv
Methyl-tert-Butyl Ether (MTBE)	<0.70	0.70	ppbv
Methylene Chloride	<3.5	3.5	ppbv
4-Methyl-2-pentanone (MIBK)	<3.0	3.0	ppbv
Styrene	<0.58	0.58	ppbv
1,1,2,2-Tetrachloroethane	<1.8	1.8	ppbv
Tetrachloroethylene (PCE)	<0.50	0.50	ppbv
Toluene	<3.2	3.2	ppbv
1,2,4-Trichlorobenzene	<0.68	0.68	ppbv
1,1,2-Trichloroethane	<0.92	0.92	ppbv
1,1,1-Trichloroethane	<0.92	0.92	ppbv
Trichloroethylene (TCE)	<0.50	0.50	ppbv
Trichlorofluoromethane (R11)	<2.2	2.2	ppbv
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<1.6	1.6	ppbv
1,3,5-Trimethylbenzene	<0.50	0.50	ppbv
1,2,4-Trimethylbenzene	<0.50	0.50	ppbv
Vinyl acetate	<0.70	0.70	ppbv
Vinyl chloride	<0.98	0.98	ppbv
o-Xylene	<0.58	0.58	ppbv
m,p-Xylenes	<0.58	0.58	ppbv
1,2,3-Trichloropropane	<0.50	0.50	ppbv

Surrogate: 4-Bromofluorobenzene 18.1

ppbv 20 90.3 70-130

LCS (B9F1924-BS1)

Prepared & Analyzed: 06/13/19

Acetone	32.2	21	ppbv	40	80.4	70-130	30
Benzene	36.9	3.0	ppbv	40	92.4	70-130	30
Benzyl chloride	39.4	9.7	ppbv	40	98.6	70-130	30
Bromodichloromethane	36.4	7.5	ppbv	40	91.0	70-130	30
Bromoform	36.6	4.8	ppbv	40	91.6	70-130	30
Bromomethane	41.8	2.6	ppbv	40	104	70-130	30


Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD RPD	RPD Limit	Notes
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VOCs by GCMS EPA TO-15 - Quality Control*Batch B9F1924 - *** DEFAULT PREP ******LCS (B9F1924-BS1) Continued****Prepared & Analyzed: 06/13/19**

2-Butanone (MEK)	37.4	17	ppbv	40	93.4	70-130			30	
Carbon Disulfide	36.3	16	ppbv	40	90.7	70-130			30	
Carbon Tetrachloride	36.6	2.1	ppbv	40	91.4	70-130			30	
Chlorobenzene	37.3	2.2	ppbv	40	93.2	70-130			30	
Chloroethane	43.4	3.8	ppbv	40	108	70-130			30	
Chloroform	36.8	2.0	ppbv	40	92.0	70-130			30	
Chloromethane	44.2	4.8	ppbv	40	110	70-130			30	
Dibromochloromethane	37.0	2.3	ppbv	40	92.5	70-130			30	
1,2-Dibromoethane (EDB)	38.5	2.6	ppbv	40	96.2	70-130			30	
1,2-Dichlorobenzene	37.3	3.3	ppbv	40	93.3	70-130			30	
1,3-Dichlorobenzene	38.3	3.3	ppbv	40	95.7	70-130			30	
1,4-Dichlorobenzene	38.8	3.3	ppbv	40	96.9	70-130			30	
Dichlorodifluoromethane (R12)	38.2	10	ppbv	40	95.4	70-130			30	
1,1-Dichloroethane	37.8	2.0	ppbv	40	94.5	70-130			30	
1,2-Dichloroethane (EDC)	36.4	2.5	ppbv	40	91.0	70-130			30	
cis-1,2-Dichloroethylene	37.3	2.0	ppbv	40	93.4	70-130			30	
1,1-Dichloroethylene	40.8	2.0	ppbv	40	102	70-130			30	
trans-1,2-Dichloroethylene	37.2	2.0	ppbv	40	93.0	70-130			30	
1,2-Dichloropropane	37.7	2.2	ppbv	40	94.2	70-130			30	
trans-1,3-Dichloropropylene	40.4	2.2	ppbv	40	101	70-130			30	
cis-1,3-Dichloropropylene	38.2	2.2	ppbv	40	95.6	70-130			30	
Dichlorotetrafluoroethane	39.5	7.2	ppbv	40	98.8	70-130			30	
Ethylbenzene	34.9	2.3	ppbv	40	87.4	70-130			30	
4-Ethyltoluene	33.7	2.0	ppbv	40	84.2	70-130			30	
Hexachlorobutadiene	35.3	4.7	ppbv	40	88.2	70-130			30	
2-Hexanone (MBK)	37.8	12	ppbv	40	94.5	70-130			30	
Isopropanol (IPA)	35.4	41	ppbv	40	88.4	70-130			30	
Methylene Chloride	36.4	14	ppbv	40	91.0	70-130			30	
4-Methyl-2-pentanone (MIBK)	36.3	12	ppbv	40	90.6	70-130			30	
Styrene	39.0	2.3	ppbv	40	97.4	70-130			30	
1,1,2,2-Tetrachloroethane	33.0	7.3	ppbv	40	82.4	70-130			30	
Tetrachloroethylene (PCE)	35.4	2.0	ppbv	40	88.4	70-130			30	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD RPD	RPD Limit	Notes
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VOCs by GCMS EPA TO-15 - Quality Control*Batch B9F1924 - *** DEFAULT PREP ******LCS (B9F1924-BS1) Continued***Prepared & Analyzed: 06/13/19*

Toluene	37.0	13	ppbv	40	92.5	70-130	30
1,2,4-Trichlorobenzene	42.2	2.7	ppbv	40	105	70-130	30
1,1,2-Trichloroethane	37.3	3.7	ppbv	40	93.2	70-130	30
1,1,1-Trichloroethane	36.0	3.7	ppbv	40	90.0	70-130	30
Trichloroethylene (TCE)	35.2	2.0	ppbv	40	88.1	70-130	30
Trichlorofluoromethane (R11)	34.6	8.9	ppbv	40	86.6	70-130	30
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	37.8	6.5	ppbv	40	94.4	70-130	30
1,3,5-Trimethylbenzene	34.1	2.0	ppbv	40	85.2	70-130	30
1,2,4-Trimethylbenzene	36.4	2.0	ppbv	40	91.1	70-130	30
Vinyl acetate	34.7	2.8	ppbv	40	86.8	70-130	30
Vinyl chloride	41.3	3.9	ppbv	40	103	70-130	30
o-Xylene	33.9	2.3	ppbv	40	84.8	70-130	30
m,p-Xylenes	67.7	2.3	ppbv	80	84.6	70-130	30
1,2,3-Trichloropropane	38.7	2.0	ppbv	40	96.8	70-130	30

Surrogate: 4-Bromofluorobenzene 19.8*ppbv 20 99.0 70-130***LCS Dup (B9F1924-BSD1)***Prepared & Analyzed: 06/14/19*

Acetone	32.2	21	ppbv	40	80.6	70-130	0.280	30
Benzene	39.2	3.0	ppbv	40	97.9	70-130	5.81	30
Benzyl chloride	43.2	9.7	ppbv	40	108	70-130	9.17	30
Bromodichloromethane	39.1	7.5	ppbv	40	97.7	70-130	7.18	30
Bromoform	39.7	4.8	ppbv	40	99.2	70-130	8.04	30
Bromomethane	43.6	2.6	ppbv	40	109	70-130	4.36	30
2-Butanone (MEK)	38.0	17	ppbv	40	94.9	70-130	1.51	30
Carbon Disulfide	37.0	16	ppbv	40	92.4	70-130	1.94	30
Carbon Tetrachloride	38.7	2.1	ppbv	40	96.8	70-130	5.82	30
Chlorobenzene	40.4	2.2	ppbv	40	101	70-130	7.91	30
Chloroethane	43.8	3.8	ppbv	40	110	70-130	0.940	30
Chloroform	38.6	2.0	ppbv	40	96.4	70-130	4.70	30
Chloromethane	45.0	4.8	ppbv	40	113	70-130	1.97	30
Dibromochloromethane	38.8	2.3	ppbv	40	97.1	70-130	4.83	30

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD RPD	Limit Notes
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VOCs by GCMS EPA TO-15 - Quality Control*Batch B9F1924 - *** DEFAULT PREP ******LCS Dup (B9F1924-BSD1) Continued****Prepared & Analyzed: 06/14/19**

1,2-Dibromoethane (EDB)	40.6	2.6	ppbv	40	102	70-130	5.34	30
1,2-Dichlorobenzene	40.7	3.3	ppbv	40	102	70-130	8.57	30
1,3-Dichlorobenzene	41.8	3.3	ppbv	40	104	70-130	8.67	30
1,4-Dichlorobenzene	41.9	3.3	ppbv	40	105	70-130	7.76	30
Dichlorodifluoromethane (R12)	40.2	10	ppbv	40	101	70-130	5.33	30
1,1-Dichloroethane	39.3	2.0	ppbv	40	98.3	70-130	3.94	30
1,2-Dichloroethane (EDC)	37.9	2.5	ppbv	40	94.8	70-130	4.09	30
cis-1,2-Dichloroethylene	39.1	2.0	ppbv	40	97.8	70-130	4.68	30
1,1-Dichloroethylene	33.4	2.0	ppbv	40	83.6	70-130	19.9	30
trans-1,2-Dichloroethylene	39.0	2.0	ppbv	40	97.5	70-130	4.75	30
1,2-Dichloropropane	39.7	2.2	ppbv	40	99.2	70-130	5.12	30
trans-1,3-Dichloropropylene	41.2	2.2	ppbv	40	103	70-130	1.96	30
cis-1,3-Dichloropropylene	41.0	2.2	ppbv	40	103	70-130	7.07	30
Dichlorotetrafluoroethane	41.9	7.2	ppbv	40	105	70-130	5.72	30
Ethylbenzene	37.8	2.3	ppbv	40	94.5	70-130	7.84	30
4-Ethyltoluene	36.7	2.0	ppbv	40	91.7	70-130	8.61	30
Hexachlorobutadiene	38.4	4.7	ppbv	40	96.0	70-130	8.39	30
2-Hexanone (MBK)	39.8	12	ppbv	40	99.5	70-130	5.13	30
Isopropanol (IPA)	36.8	41	ppbv	40	92.0	70-130	3.91	30
Methylene Chloride	30.7	14	ppbv	40	76.8	70-130	16.8	30
4-Methyl-2-pentanone (MIBK)	38.6	12	ppbv	40	96.4	70-130	6.17	30
Styrene	41.8	2.3	ppbv	40	104	70-130	6.94	30
1,1,2,2-Tetrachloroethane	35.4	7.3	ppbv	40	88.6	70-130	7.20	30
Tetrachloroethylene (PCE)	37.4	2.0	ppbv	40	93.6	70-130	5.68	30
Toluene	38.9	13	ppbv	40	97.2	70-130	4.90	30
1,2,4-Trichlorobenzene	48.2	2.7	ppbv	40	121	70-130	13.4	30
1,1,2-Trichloroethane	38.5	3.7	ppbv	40	96.2	70-130	3.12	30
1,1,1-Trichloroethane	37.4	3.7	ppbv	40	93.5	70-130	3.81	30
Trichloroethylene (TCE)	38.0	2.0	ppbv	40	95.0	70-130	7.59	30
Trichlorofluoromethane (R11)	36.3	8.9	ppbv	40	90.7	70-130	4.66	30
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	39.4	6.5	ppbv	40	98.6	70-130	4.27	30

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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VOCs by GCMS EPA TO-15 - Quality Control*Batch B9F1924 - *** DEFAULT PREP ******LCS Dup (B9F1924-BSD1) Continued****Prepared & Analyzed: 06/14/19**

1,3,5-Trimethylbenzene	37.1	2.0	ppbv	40	92.8	70-130	8.59	30
1,2,4-Trimethylbenzene	39.8	2.0	ppbv	40	99.4	70-130	8.69	30
Vinyl acetate	35.1	2.8	ppbv	40	87.7	70-130	1.06	30
Vinyl chloride	42.3	3.9	ppbv	40	106	70-130	2.34	30
o-Xylene	36.8	2.3	ppbv	40	92.0	70-130	8.17	30
m,p-Xylenes	71.9	2.3	ppbv	80	89.8	70-130	5.96	30
1,2,3-Trichloropropane	42.4	2.0	ppbv	40	106	70-130	8.98	30

Surrogate: 4-Bromofluorobenzene**20.0 ppbv 20 100 70-130****Duplicate (B9F1924-DUP1)****Source: 9F12016-01 Prepared & Analyzed: 06/14/19**

Acetone	<21	21	ppbv		6.84			30
Benzene	<3.0	3.0	ppbv					30
Benzyl chloride	<9.7	9.7	ppbv					30
Bromodichloromethane	<7.5	7.5	ppbv					30
Bromoform	<4.8	4.8	ppbv					30
Bromomethane	<2.6	2.6	ppbv					30
2-Butanone (MEK)	<17	17	ppbv					30
Carbon Disulfide	<16	16	ppbv	0.550		1.80		30
Carbon Tetrachloride	<2.1	2.1	ppbv					30
Chlorobenzene	<2.2	2.2	ppbv					30
Chloroethane	<3.8	3.8	ppbv					30
Chloroform	<2.0	2.0	ppbv					30
Chloromethane	<4.8	4.8	ppbv					30
Dibromochloromethane	<2.3	2.3	ppbv					30
1,2-Dibromoethane (EDB)	<2.6	2.6	ppbv					30
1,2-Dichlorobenzene	<3.3	3.3	ppbv					30
1,3-Dichlorobenzene	<3.3	3.3	ppbv					30
1,4-Dichlorobenzene	<3.3	3.3	ppbv					30
Dichlorodifluoromethane (R12)	<10	10	ppbv					30
1,1-Dichloroethane	7.10	2.0	ppbv	7.15		0.702		30
1,2-Dichloroethane (EDC)	<2.5	2.5	ppbv					30
cis-1,2-Dichloroethylene	18.4	2.0	ppbv	18.4		0.217		30

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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VOCs by GCMS EPA TO-15 - Quality Control*Batch B9F1924 - *** DEFAULT PREP ****

Duplicate (B9F1924-DUP1) Continued	Source: 9F12016-01			Prepared & Analyzed: 06/14/19						
1,1-Dichloroethylene	<2.0	2.0	ppbv		0.990			21.2	30	
trans-1,2-Dichloroethylene	2.48	2.0	ppbv		2.46			0.810	30	
1,2-Dichloropropane	<2.2	2.2	ppbv						30	
trans-1,3-Dichloropropylene	<2.2	2.2	ppbv						30	
cis-1,3-Dichloropropylene	<2.2	2.2	ppbv						30	
Dichlorotetrafluoroethane	<7.2	7.2	ppbv						30	
1,4-Dioxane	<2.8	2.8	ppbv						30	
Ethylbenzene	<2.3	2.3	ppbv						30	
4-Ethyltoluene	<2.0	2.0	ppbv						30	
Hexachlorobutadiene	<4.7	4.7	ppbv						30	
2-Hexanone (MBK)	<12	12	ppbv						30	
Isopropanol (IPA)	<41	41	ppbv						30	
Methyl-tert-Butyl Ether (MTBE)	<2.8	2.8	ppbv						30	
Methylene Chloride	<14	14	ppbv		18.1			26.3	30	
4-Methyl-2-pentanone (MIBK)	<12	12	ppbv						30	
Styrene	<2.3	2.3	ppbv						30	
1,1,2,2-Tetrachloroethane	<7.3	7.3	ppbv						30	
Tetrachloroethylene (PCE)	118	4.0	ppbv		117			1.09	30	**b
Toluene	<13	13	ppbv						30	
1,2,4-Trichlorobenzene	<2.7	2.7	ppbv						30	
1,1,2-Trichloroethane	<3.7	3.7	ppbv						30	
1,1,1-Trichloroethane	<3.7	3.7	ppbv						30	
Trichloroethylene (TCE)	41.0	2.0	ppbv		41.1			0.171	30	
Trichlorofluoromethane (R11)	<8.9	8.9	ppbv						30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<6.5	6.5	ppbv						30	
1,3,5-Trimethylbenzene	<2.0	2.0	ppbv						30	
1,2,4-Trimethylbenzene	<2.0	2.0	ppbv						30	
Vinyl acetate	<2.8	2.8	ppbv						30	
Vinyl chloride	<3.9	3.9	ppbv						30	
o-Xylene	<2.3	2.3	ppbv						30	
m,p-Xylenes	<2.3	2.3	ppbv						30	

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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VOCs by GCMS EPA TO-15 - Quality Control

Batch B9F1924 - *** DEFAULT PREP ***

Duplicate (B9F1924-DUP1) Continued Source: 9F12016-01 Prepared & Analyzed: 06/14/19

1,2,3-Trichloropropane	<2.0	2.0	ppbv						30	
Surrogate: 4-Bromofluorobenzene	21.2		ppbv	20		106	70-130			



Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874356
Date Received: 06/12/19
Date Reported: 06/24/19

Special Notes

- [1] = ** : Result obtained from DF=1
- [2] = **a : Result obtained from DF=10
- [3] = **b : Result obtained from DF=2
- [4] = **c : Result obtained from DF=7.5
- [5] = E : The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate (CLP E-flag).

Viorel Vasile
Operations Manager



AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311

Tel: 818-998-5547 Fax: 818-998-7258

A.A. C.No.: 8316

Page 1 of 1

Client: Haley & Aldrich ; JHA Environmental, Inc.		Project Name / No.: Cooper Drum		Sampler's Name: Alex Felix						
Project Manager: Chris Tsatsios / Matt Hillman		Site Address: 9313 Rayo Ave		Sampler's Signature:						
Phone: 714-371-1820 / 714-392-5970		City: Southgate		P.O.No:						
Fax: 949-453-1047		State & Zip: CA		Quote.:						
TAT Turnaround Codes ** 1 = Same Day Rush 4 = 72 Hour Rush 2 = 24 Hour Rush 5 = 5 Day Rush 3 = 48 Hour Rush X = 10 Working Days (Standard TAT)										
ANALYSIS REQUESTED (Test Name) 										
Special Instructions										
Client I.D.	A.A. I.D.	Date	Time	Sample Matrix	No. of Cont	Please enter the TAT Turnaround Codes ** below				
VP-05A-061219-0001	9F12015-01	6/12/2019	1105	Vapor	1	X				
VP-07C-061219-0001	02	6/12/2019	1120	Vapor	1	X				
VP-09D-061219-0001	03	6/12/2019	1140	Vapor	1	X				
VP-10B-061219-0001	04	6/12/2019	1030	Vapor	1	X				
VP-13B-061219-0001	05	6/12/2019	1000	Vapor	1	X				
VP-14A-061219-0001		6/12/2019		Vapor	1	X				
VP-14B-061219-0001	06	6/12/2019	0910	Vapor	1	X				
VP-14C-061219-0001	07	6/12/2019	0850	Vapor	1	X				
VP-14D-061219-0001	08	6/12/2019	0830	Vapor	1	X				
For Laboratory Use						Received by				
						Received by				
Relinquished by						Date 6-12-19 Time 1440				
Relinquished by						Date 6-12-19 Time 1617				
Relinquished by						Date _____ Time _____ Received by _____				
A.A. Project No.: A874356/9F12015						Received by _____				

Note: By Relinquishing samples to American Analytics, Client agrees to pay for the services requested on this chain of Custody form and any additional client-requested analyses performed on this project.
 Payment for services is due within 30 Days from the date invoice. Sample(s) will be disposed of after 45 days following the submittal of the sample(s) To American Analytics.



9765 Eton Avenue
Chatsworth
California 91311
Tel: (818) 998-5547
Fax: (818) 998-7258

June 24, 2019

Peter Bennett
Haley & Aldrich (Oakland)
1956 Webster St., Suite 450
Oakland, CA 94612

Re : Cooper Drum - South Gate / 130072-024
A874357 / 9F12016

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received on 06/12/19 16:17 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Program Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report or require additional information please call me at American Analytics.

Sincerely,

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874357
Date Received: 06/12/19
Date Reported: 06/24/19

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
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TO-15 (Mid Level)ppbv

SVE-VGACI-061219-0001 9F12016-01 Vapor 5 06/12/19 14:15 06/12/19 16:17

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client:	Haley & Aldrich (Oakland)	AA Project No:	A874357
Project No:	130072-024	Date Received:	06/12/19
Project Name:	Cooper Drum - South Gate	Date Reported:	06/24/19
Matrix:	Vapor	Sampled:	06/12/19
Dilution:	1	Prepared:	06/13/19
Method:	VOCs by GCMS EPA TO-15	Analyzed:	06/13/19

SVE-VGACI-061219-0001

9F12016-01 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
Acetone	<0.050	ug/L	0.050	<21	ppbv	21
Benzene	<0.0096	ug/L	0.0096	<3.0	ppbv	3.0
Benzyl chloride	<0.050	ug/L	0.050	<9.7	ppbv	9.7
Bromodichloromethane	<0.050	ug/L	0.050	<7.5	ppbv	7.5
Bromoform	<0.050	ug/L	0.050	<4.8	ppbv	4.8
Bromomethane	<0.010	ug/L	0.010	<2.6	ppbv	2.6
2-Butanone (MEK)	<0.050	ug/L	0.050	<17	ppbv	17
Carbon Disulfide	<0.050	ug/L	0.050	<16	ppbv	16
Carbon Tetrachloride	<0.013	ug/L	0.013	<2.1	ppbv	2.1
Chlorobenzene	<0.010	ug/L	0.010	<2.2	ppbv	2.2
Chloroethane	<0.010	ug/L	0.010	<3.8	ppbv	3.8
Chloroform	<0.0098	ug/L	0.0098	<2.0	ppbv	2.0
Chloromethane	<0.0099	ug/L	0.0099	<4.8	ppbv	4.8
Dibromochloromethane	<0.020	ug/L	0.020	<2.3	ppbv	2.3
1,2-Dibromoethane (EDB)	<0.020	ug/L	0.020	<2.6	ppbv	2.6
1,2-Dichlorobenzene	<0.020	ug/L	0.020	<3.3	ppbv	3.3
1,3-Dichlorobenzene	<0.020	ug/L	0.020	<3.3	ppbv	3.3
1,4-Dichlorobenzene	<0.020	ug/L	0.020	<3.3	ppbv	3.3
Dichlorodifluoromethane (R12)	<0.049	ug/L	0.049	<10	ppbv	10
1,1-Dichloroethane	0.029	ug/L	0.0081	7.2	ppbv	2.0
1,2-Dichloroethane (EDC)	<0.010	ug/L	0.010	<2.5	ppbv	2.5

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 1
Method: VOCs by GCMS EPA TO-15

AA Project No: A874357
Date Received: 06/12/19
Date Reported: 06/24/19
Sampled: 06/12/19
Prepared: 06/13/19
Analyzed: 06/13/19

SVE-VGACI-061219-0001

9F12016-01 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
cis-1,2-Dichloroethylene	0.073	ug/L	0.0079	18	ppbv	2.0
1,1-Dichloroethylene	<0.0079	ug/L	0.0079	<2.0	ppbv	2.0
trans-1,2-Dichloroethylene	0.0098	ug/L	0.0079	2.5	ppbv	2.0
1,2-Dichloropropane	<0.010	ug/L	0.010	<2.2	ppbv	2.2
trans-1,3-Dichloropropylene	<0.01	ug/L	0.01	<2.2	ppbv	2.2
cis-1,3-Dichloropropylene	<0.01	ug/L	0.01	<2.2	ppbv	2.2
Dichlorotetrafluoroethane	<0.050	ug/L	0.050	<7.2	ppbv	7.2
1,4-Dioxane	<0.010	ug/L	0.010	<2.8	ppbv	2.8
Ethylbenzene	<0.01	ug/L	0.01	<2.3	ppbv	2.3
4-Ethyltoluene	<0.0098	ug/L	0.0098	<2.0	ppbv	2.0
Hexachlorobutadiene	<0.050	ug/L	0.050	<4.7	ppbv	4.7
2-Hexanone (MBK)	<0.049	ug/L	0.049	<12	ppbv	12
Isopropanol (IPA)	<0.10	ug/L	0.10	<41	ppbv	41
Methyl-tert-Butyl Ether (MTBE)	<0.010	ug/L	0.010	<2.8	ppbv	2.8
Methylene Chloride	0.063	ug/L	0.049	18	ppbv	14
4-Methyl-2-pentanone (MIBK)	<0.049	ug/L	0.049	<12	ppbv	12
Styrene	<0.0098	ug/L	0.0098	<2.3	ppbv	2.3
1,1,2,2-Tetrachloroethane	<0.050	ug/L	0.050	<7.3	ppbv	7.3
Tetrachloroethylene (PCE)	0.79 **	ug/L	0.014	120 **	ppbv	2.0
Toluene	<0.049	ug/L	0.049	<13	ppbv	13
1,2,4-Trichlorobenzene	<0.020	ug/L	0.020	<2.7	ppbv	2.7

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate
Matrix: Vapor
Dilution: 1
Method: VOCs by GCMS EPA TO-15

AA Project No: A874357
Date Received: 06/12/19
Date Reported: 06/24/19
Sampled: 06/12/19
Prepared: 06/13/19
Analyzed: 06/13/19

SVE-VGACI-061219-0001

9F12016-01 (Vapor)

Analyte	Result	(ug/L)	MRL	Result	(ppbv)	MRL
1,1,2-Trichloroethane	<0.020	ug/L	0.020	<3.7	ppbv	3.7
1,1,1-Trichloroethane	<0.020	ug/L	0.020	<3.7	ppbv	3.7
Trichloroethylene (TCE)	0.22	ug/L	0.011	41	ppbv	2.0
Trichlorofluoromethane (R11)	<0.050	ug/L	0.050	<8.9	ppbv	8.9
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.050	ug/L	0.050	<6.5	ppbv	6.5
1,3,5-Trimethylbenzene	<0.0098	ug/L	0.0098	<2.0	ppbv	2.0
1,2,4-Trimethylbenzene	<0.0098	ug/L	0.0098	<2.0	ppbv	2.0
Vinyl acetate	<0.0099	ug/L	0.0099	<2.8	ppbv	2.8
Vinyl chloride	<0.01	ug/L	0.01	<3.9	ppbv	3.9
o-Xylene	<0.01	ug/L	0.01	<2.3	ppbv	2.3
m,p-Xylenes	<0.01	ug/L	0.01	<2.3	ppbv	2.3
1,2,3-Trichloropropane	<0.012	ug/L	0.012	<2.0	ppbv	2.0
Surrogates		%REC		%REC Limits		
4-Bromofluorobenzene		105 %		70-130		


Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874357
Date Received: 06/12/19
Date Reported: 06/24/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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VOCs by GCMS EPA TO-15 - Quality Control

Batch B9F1924 - *** DEFAULT PREP ***

Blank (B9F1924-BLK1)

Prepared & Analyzed: 06/13/19

Acetone	<5.2	5.2	ppbv
Benzene	<0.75	0.75	ppbv
Benzyl chloride	<2.4	2.4	ppbv
Bromodichloromethane	<1.9	1.9	ppbv
Bromoform	<1.2	1.2	ppbv
Bromomethane	<0.65	0.65	ppbv
2-Butanone (MEK)	<4.2	4.2	ppbv
Carbon Disulfide	<4.0	4.0	ppbv
Carbon Tetrachloride	<0.52	0.52	ppbv
Chlorobenzene	<0.55	0.55	ppbv
Chloroethane	<0.95	0.95	ppbv
Chloroform	<0.50	0.50	ppbv
Chloromethane	<1.2	1.2	ppbv
Dibromochloromethane	<0.58	0.58	ppbv
1,2-Dibromoethane (EDB)	<0.65	0.65	ppbv
1,2-Dichlorobenzene	<0.82	0.82	ppbv
1,3-Dichlorobenzene	<0.82	0.82	ppbv
1,4-Dichlorobenzene	<0.82	0.82	ppbv
Dichlorodifluoromethane (R12)	<2.5	2.5	ppbv
1,1-Dichloroethane	<0.50	0.50	ppbv
1,2-Dichloroethane (EDC)	<0.62	0.62	ppbv
cis-1,2-Dichloroethylene	<0.50	0.50	ppbv
1,1-Dichloroethylene	<0.50	0.50	ppbv
trans-1,2-Dichloroethylene	<0.50	0.50	ppbv
1,2-Dichloropropane	<0.55	0.55	ppbv
trans-1,3-Dichloropropylene	<0.55	0.55	ppbv
cis-1,3-Dichloropropylene	<0.55	0.55	ppbv
Dichlorotetrafluoroethane	<1.8	1.8	ppbv
1,4-Dioxane	<0.70	0.70	ppbv
Ethylbenzene	<0.58	0.58	ppbv
4-Ethyltoluene	<0.50	0.50	ppbv
Hexachlorobutadiene	<1.2	1.2	ppbv


Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874357
Date Received: 06/12/19
Date Reported: 06/24/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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VOCs by GCMS EPA TO-15 - Quality Control*Batch B9F1924 - *** DEFAULT PREP ******Blank (B9F1924-BLK1) Continued****Prepared & Analyzed: 06/13/19**

2-Hexanone (MBK)	<3.0	3.0	ppbv
Isopropanol (IPA)	<10	10	ppbv
Methyl-tert-Butyl Ether (MTBE)	<0.70	0.70	ppbv
Methylene Chloride	<3.5	3.5	ppbv
4-Methyl-2-pentanone (MIBK)	<3.0	3.0	ppbv
Styrene	<0.58	0.58	ppbv
1,1,2,2-Tetrachloroethane	<1.8	1.8	ppbv
Tetrachloroethylene (PCE)	<0.50	0.50	ppbv
Toluene	<3.2	3.2	ppbv
1,2,4-Trichlorobenzene	<0.68	0.68	ppbv
1,1,2-Trichloroethane	<0.92	0.92	ppbv
1,1,1-Trichloroethane	<0.92	0.92	ppbv
Trichloroethylene (TCE)	<0.50	0.50	ppbv
Trichlorofluoromethane (R11)	<2.2	2.2	ppbv
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<1.6	1.6	ppbv
1,3,5-Trimethylbenzene	<0.50	0.50	ppbv
1,2,4-Trimethylbenzene	<0.50	0.50	ppbv
Vinyl acetate	<0.70	0.70	ppbv
Vinyl chloride	<0.98	0.98	ppbv
o-Xylene	<0.58	0.58	ppbv
m,p-Xylenes	<0.58	0.58	ppbv
1,2,3-Trichloropropane	<0.50	0.50	ppbv

Surrogate: 4-Bromofluorobenzene 18.1 ppbv 20 90.3 70-130**LCS (B9F1924-BS1) Prepared & Analyzed: 06/13/19**

Acetone	32.2	21	ppbv	40	80.4	70-130	30
Benzene	36.9	3.0	ppbv	40	92.4	70-130	30
Benzyl chloride	39.4	9.7	ppbv	40	98.6	70-130	30
Bromodichloromethane	36.4	7.5	ppbv	40	91.0	70-130	30
Bromoform	36.6	4.8	ppbv	40	91.6	70-130	30
Bromomethane	41.8	2.6	ppbv	40	104	70-130	30


Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874357
Date Received: 06/12/19
Date Reported: 06/24/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD RPD	RPD Limit	Notes
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VOCs by GCMS EPA TO-15 - Quality Control*Batch B9F1924 - *** DEFAULT PREP ******LCS (B9F1924-BS1) Continued****Prepared & Analyzed: 06/13/19**

2-Butanone (MEK)	37.4	17	ppbv	40	93.4	70-130		30		
Carbon Disulfide	36.3	16	ppbv	40	90.7	70-130		30		
Carbon Tetrachloride	36.6	2.1	ppbv	40	91.4	70-130		30		
Chlorobenzene	37.3	2.2	ppbv	40	93.2	70-130		30		
Chloroethane	43.4	3.8	ppbv	40	108	70-130		30		
Chloroform	36.8	2.0	ppbv	40	92.0	70-130		30		
Chloromethane	44.2	4.8	ppbv	40	110	70-130		30		
Dibromochloromethane	37.0	2.3	ppbv	40	92.5	70-130		30		
1,2-Dibromoethane (EDB)	38.5	2.6	ppbv	40	96.2	70-130		30		
1,2-Dichlorobenzene	37.3	3.3	ppbv	40	93.3	70-130		30		
1,3-Dichlorobenzene	38.3	3.3	ppbv	40	95.7	70-130		30		
1,4-Dichlorobenzene	38.8	3.3	ppbv	40	96.9	70-130		30		
Dichlorodifluoromethane (R12)	38.2	10	ppbv	40	95.4	70-130		30		
1,1-Dichloroethane	37.8	2.0	ppbv	40	94.5	70-130		30		
1,2-Dichloroethane (EDC)	36.4	2.5	ppbv	40	91.0	70-130		30		
cis-1,2-Dichloroethylene	37.3	2.0	ppbv	40	93.4	70-130		30		
1,1-Dichloroethylene	40.8	2.0	ppbv	40	102	70-130		30		
trans-1,2-Dichloroethylene	37.2	2.0	ppbv	40	93.0	70-130		30		
1,2-Dichloropropane	37.7	2.2	ppbv	40	94.2	70-130		30		
trans-1,3-Dichloropropylene	40.4	2.2	ppbv	40	101	70-130		30		
cis-1,3-Dichloropropylene	38.2	2.2	ppbv	40	95.6	70-130		30		
Dichlorotetrafluoroethane	39.5	7.2	ppbv	40	98.8	70-130		30		
Ethylbenzene	34.9	2.3	ppbv	40	87.4	70-130		30		
4-Ethyltoluene	33.7	2.0	ppbv	40	84.2	70-130		30		
Hexachlorobutadiene	35.3	4.7	ppbv	40	88.2	70-130		30		
2-Hexanone (MBK)	37.8	12	ppbv	40	94.5	70-130		30		
Isopropanol (IPA)	35.4	41	ppbv	40	88.4	70-130		30		
Methylene Chloride	36.4	14	ppbv	40	91.0	70-130		30		
4-Methyl-2-pentanone (MIBK)	36.3	12	ppbv	40	90.6	70-130		30		
Styrene	39.0	2.3	ppbv	40	97.4	70-130		30		
1,1,2,2-Tetrachloroethane	33.0	7.3	ppbv	40	82.4	70-130		30		
Tetrachloroethylene (PCE)	35.4	2.0	ppbv	40	88.4	70-130		30		

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874357
Date Received: 06/12/19
Date Reported: 06/24/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 - Quality Control										
Batch B9F1924 - *** DEFAULT PREP ***										
LCS (B9F1924-BS1) Continued										
					Prepared & Analyzed: 06/13/19					
Toluene	37.0	13	ppbv	40	92.5	70-130			30	
1,2,4-Trichlorobenzene	42.2	2.7	ppbv	40	105	70-130			30	
1,1,2-Trichloroethane	37.3	3.7	ppbv	40	93.2	70-130			30	
1,1,1-Trichloroethane	36.0	3.7	ppbv	40	90.0	70-130			30	
Trichloroethylene (TCE)	35.2	2.0	ppbv	40	88.1	70-130			30	
Trichlorofluoromethane (R11)	34.6	8.9	ppbv	40	86.6	70-130			30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	37.8	6.5	ppbv	40	94.4	70-130			30	
1,3,5-Trimethylbenzene	34.1	2.0	ppbv	40	85.2	70-130			30	
1,2,4-Trimethylbenzene	36.4	2.0	ppbv	40	91.1	70-130			30	
Vinyl acetate	34.7	2.8	ppbv	40	86.8	70-130			30	
Vinyl chloride	41.3	3.9	ppbv	40	103	70-130			30	
o-Xylene	33.9	2.3	ppbv	40	84.8	70-130			30	
m,p-Xylenes	67.7	2.3	ppbv	80	84.6	70-130			30	
1,2,3-Trichloropropane	38.7	2.0	ppbv	40	96.8	70-130			30	
Surrogate: 4-Bromofluorobenzene	19.8		ppbv	20	99.0	70-130				
LCS Dup (B9F1924-BSD1)										
					Prepared & Analyzed: 06/14/19					
Acetone	32.2	21	ppbv	40	80.6	70-130	0.280		30	
Benzene	39.2	3.0	ppbv	40	97.9	70-130	5.81		30	
Benzyl chloride	43.2	9.7	ppbv	40	108	70-130	9.17		30	
Bromodichloromethane	39.1	7.5	ppbv	40	97.7	70-130	7.18		30	
Bromoform	39.7	4.8	ppbv	40	99.2	70-130	8.04		30	
Bromomethane	43.6	2.6	ppbv	40	109	70-130	4.36		30	
2-Butanone (MEK)	38.0	17	ppbv	40	94.9	70-130	1.51		30	
Carbon Disulfide	37.0	16	ppbv	40	92.4	70-130	1.94		30	
Carbon Tetrachloride	38.7	2.1	ppbv	40	96.8	70-130	5.82		30	
Chlorobenzene	40.4	2.2	ppbv	40	101	70-130	7.91		30	
Chloroethane	43.8	3.8	ppbv	40	110	70-130	0.940		30	
Chloroform	38.6	2.0	ppbv	40	96.4	70-130	4.70		30	
Chloromethane	45.0	4.8	ppbv	40	113	70-130	1.97		30	
Dibromochloromethane	38.8	2.3	ppbv	40	97.1	70-130	4.83		30	

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874357
Date Received: 06/12/19
Date Reported: 06/24/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD RPD	Limit Notes
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VOCs by GCMS EPA TO-15 - Quality Control*Batch B9F1924 - *** DEFAULT PREP ******LCS Dup (B9F1924-BSD1) Continued****Prepared & Analyzed: 06/14/19**

1,2-Dibromoethane (EDB)	40.6	2.6	ppbv	40	102	70-130	5.34	30
1,2-Dichlorobenzene	40.7	3.3	ppbv	40	102	70-130	8.57	30
1,3-Dichlorobenzene	41.8	3.3	ppbv	40	104	70-130	8.67	30
1,4-Dichlorobenzene	41.9	3.3	ppbv	40	105	70-130	7.76	30
Dichlorodifluoromethane (R12)	40.2	10	ppbv	40	101	70-130	5.33	30
1,1-Dichloroethane	39.3	2.0	ppbv	40	98.3	70-130	3.94	30
1,2-Dichloroethane (EDC)	37.9	2.5	ppbv	40	94.8	70-130	4.09	30
cis-1,2-Dichloroethylene	39.1	2.0	ppbv	40	97.8	70-130	4.68	30
1,1-Dichloroethylene	33.4	2.0	ppbv	40	83.6	70-130	19.9	30
trans-1,2-Dichloroethylene	39.0	2.0	ppbv	40	97.5	70-130	4.75	30
1,2-Dichloropropane	39.7	2.2	ppbv	40	99.2	70-130	5.12	30
trans-1,3-Dichloropropylene	41.2	2.2	ppbv	40	103	70-130	1.96	30
cis-1,3-Dichloropropylene	41.0	2.2	ppbv	40	103	70-130	7.07	30
Dichlorotetrafluoroethane	41.9	7.2	ppbv	40	105	70-130	5.72	30
Ethylbenzene	37.8	2.3	ppbv	40	94.5	70-130	7.84	30
4-Ethyltoluene	36.7	2.0	ppbv	40	91.7	70-130	8.61	30
Hexachlorobutadiene	38.4	4.7	ppbv	40	96.0	70-130	8.39	30
2-Hexanone (MBK)	39.8	12	ppbv	40	99.5	70-130	5.13	30
Isopropanol (IPA)	36.8	41	ppbv	40	92.0	70-130	3.91	30
Methylene Chloride	30.7	14	ppbv	40	76.8	70-130	16.8	30
4-Methyl-2-pentanone (MIBK)	38.6	12	ppbv	40	96.4	70-130	6.17	30
Styrene	41.8	2.3	ppbv	40	104	70-130	6.94	30
1,1,2,2-Tetrachloroethane	35.4	7.3	ppbv	40	88.6	70-130	7.20	30
Tetrachloroethylene (PCE)	37.4	2.0	ppbv	40	93.6	70-130	5.68	30
Toluene	38.9	13	ppbv	40	97.2	70-130	4.90	30
1,2,4-Trichlorobenzene	48.2	2.7	ppbv	40	121	70-130	13.4	30
1,1,2-Trichloroethane	38.5	3.7	ppbv	40	96.2	70-130	3.12	30
1,1,1-Trichloroethane	37.4	3.7	ppbv	40	93.5	70-130	3.81	30
Trichloroethylene (TCE)	38.0	2.0	ppbv	40	95.0	70-130	7.59	30
Trichlorofluoromethane (R11)	36.3	8.9	ppbv	40	90.7	70-130	4.66	30
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	39.4	6.5	ppbv	40	98.6	70-130	4.27	30

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874357
Date Received: 06/12/19
Date Reported: 06/24/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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VOCs by GCMS EPA TO-15 - Quality Control*Batch B9F1924 - *** DEFAULT PREP ******LCS Dup (B9F1924-BSD1) Continued****Prepared & Analyzed: 06/14/19**

1,3,5-Trimethylbenzene	37.1	2.0	ppbv	40	92.8	70-130	8.59	30
1,2,4-Trimethylbenzene	39.8	2.0	ppbv	40	99.4	70-130	8.69	30
Vinyl acetate	35.1	2.8	ppbv	40	87.7	70-130	1.06	30
Vinyl chloride	42.3	3.9	ppbv	40	106	70-130	2.34	30
o-Xylene	36.8	2.3	ppbv	40	92.0	70-130	8.17	30
m,p-Xylenes	71.9	2.3	ppbv	80	89.8	70-130	5.96	30
1,2,3-Trichloropropane	42.4	2.0	ppbv	40	106	70-130	8.98	30

Surrogate: 4-Bromofluorobenzene**20.0 ppbv 20 100 70-130****Duplicate (B9F1924-DUP1)****Source: 9F12016-01 Prepared & Analyzed: 06/14/19**

Acetone	<21	21	ppbv		6.84			30
Benzene	<3.0	3.0	ppbv		<3.0			30
Benzyl chloride	<9.7	9.7	ppbv		<9.7			30
Bromodichloromethane	<7.5	7.5	ppbv		<7.5			30
Bromoform	<4.8	4.8	ppbv		<4.8			30
Bromomethane	<2.6	2.6	ppbv		<2.6			30
2-Butanone (MEK)	<17	17	ppbv		<17			30
Carbon Disulfide	<16	16	ppbv		0.550		1.80	30
Carbon Tetrachloride	<2.1	2.1	ppbv		<2.1			30
Chlorobenzene	<2.2	2.2	ppbv		<2.2			30
Chloroethane	<3.8	3.8	ppbv		<3.8			30
Chloroform	<2.0	2.0	ppbv		<2.0			30
Chloromethane	<4.8	4.8	ppbv		<4.8			30
Dibromochloromethane	<2.3	2.3	ppbv		<2.3			30
1,2-Dibromoethane (EDB)	<2.6	2.6	ppbv		<2.6			30
1,2-Dichlorobenzene	<3.3	3.3	ppbv		<3.3			30
1,3-Dichlorobenzene	<3.3	3.3	ppbv		<3.3			30
1,4-Dichlorobenzene	<3.3	3.3	ppbv		<3.3			30
Dichlorodifluoromethane (R12)	<10	10	ppbv		<10			30
1,1-Dichloroethane	7.10	2.0	ppbv		7.15		0.702	30
1,2-Dichloroethane (EDC)	<2.5	2.5	ppbv		<2.5			30
cis-1,2-Dichloroethylene	18.4	2.0	ppbv		18.4		0.217	30

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874357
Date Received: 06/12/19
Date Reported: 06/24/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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VOCs by GCMS EPA TO-15 - Quality Control*Batch B9F1924 - *** DEFAULT PREP ******Duplicate (B9F1924-DUP1) Continued Source: 9F12016-01 Prepared & Analyzed: 06/14/19**

1,1-Dichloroethylene	<2.0	2.0	ppbv		0.990			21.2	30	
trans-1,2-Dichloroethylene	2.48	2.0	ppbv		2.46			0.810	30	
1,2-Dichloropropane	<2.2	2.2	ppbv		<2.2				30	
trans-1,3-Dichloropropylene	<2.2	2.2	ppbv		<2.2				30	
cis-1,3-Dichloropropylene	<2.2	2.2	ppbv		<2.2				30	
Dichlorotetrafluoroethane	<7.2	7.2	ppbv		<7.2				30	
1,4-Dioxane	<2.8	2.8	ppbv		<2.8				30	
Ethylbenzene	<2.3	2.3	ppbv		<2.3				30	
4-Ethyltoluene	<2.0	2.0	ppbv		<2.0				30	
Hexachlorobutadiene	<4.7	4.7	ppbv		<4.7				30	
2-Hexanone (MBK)	<12	12	ppbv		<12				30	
Isopropanol (IPA)	<41	41	ppbv		<41				30	
Methyl-tert-Butyl Ether (MTBE)	<2.8	2.8	ppbv		<2.8				30	
Methylene Chloride	<14	14	ppbv		18.1			26.3	30	
4-Methyl-2-pentanone (MIBK)	<12	12	ppbv		<12				30	
Styrene	<2.3	2.3	ppbv		<2.3				30	
1,1,2,2-Tetrachloroethane	<7.3	7.3	ppbv		<7.3				30	
Tetrachloroethylene (PCE)	118	4.0	ppbv		117			1.09	30	**
Toluene	<13	13	ppbv		<13				30	
1,2,4-Trichlorobenzene	<2.7	2.7	ppbv		<2.7				30	
1,1,2-Trichloroethane	<3.7	3.7	ppbv		<3.7				30	
1,1,1-Trichloroethane	<3.7	3.7	ppbv		<3.7				30	
Trichloroethylene (TCE)	41.0	2.0	ppbv		41.1			0.171	30	
Trichlorofluoromethane (R11)	<8.9	8.9	ppbv		<8.9				30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<6.5	6.5	ppbv		<6.5				30	
1,3,5-Trimethylbenzene	<2.0	2.0	ppbv		<2.0				30	
1,2,4-Trimethylbenzene	<2.0	2.0	ppbv		<2.0				30	
Vinyl acetate	<2.8	2.8	ppbv		<2.8				30	
Vinyl chloride	<3.9	3.9	ppbv		<3.9				30	
o-Xylene	<2.3	2.3	ppbv		<2.3				30	
m,p-Xylenes	<2.3	2.3	ppbv		<2.3				30	

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LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874357
Date Received: 06/12/19
Date Reported: 06/24/19

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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VOCs by GCMS EPA TO-15 - Quality Control

Batch B9F1924 - *** DEFAULT PREP ***

Duplicate (B9F1924-DUP1) Continued Source: 9F12016-01 Prepared & Analyzed: 06/14/19

1,2,3-Trichloropropane	<2.0	2.0	ppbv		<2.0			30		
Surrogate: 4-Bromofluorobenzene	21.2		ppbv	20		106	70-130			



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LABORATORY ANALYSIS RESULTS

Client: Haley & Aldrich (Oakland)
Project No: 130072-024
Project Name: Cooper Drum - South Gate

AA Project No: A874357
Date Received: 06/12/19
Date Reported: 06/24/19

Special Notes

[1] = ** : Result obtained from DF=2

Viorel Vasile
Operations Manager



AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311

Tel: 818-998-5547 Fax: 818-998-7258

AA COC No.

18347

Page 1 of 1

Client: Haley & Aldrich ; JHA Environmental, Inc.		Project Name / No.: Cooper Drum		Sampler's Name: Alex Felix											
Project Manager: Chris Tsatsios / Matt Hillman		Site Address: 9313 Rayo Ave		Sampler's Signature:											
Phone: 714-371-1820 / 714-392-5970		City: Southgate		P.O.No:											
Fax: 949-453-1047		State & Zip: CA		Quote.:											
<p style="text-align: center;">TAT Turnaround Codes **</p> <table><tr><td>1 = Same Day Rush</td><td>4 = 72 Hour Rush</td></tr><tr><td>2 = 24 Hour Rush</td><td>5 = 5 Day Rush</td></tr><tr><td>3 = 48 Hour Rush</td><td>X = 10 Working Days (Standard TAT)</td></tr></table>						1 = Same Day Rush	4 = 72 Hour Rush	2 = 24 Hour Rush	5 = 5 Day Rush	3 = 48 Hour Rush	X = 10 Working Days (Standard TAT)				
1 = Same Day Rush	4 = 72 Hour Rush														
2 = 24 Hour Rush	5 = 5 Day Rush														
3 = 48 Hour Rush	X = 10 Working Days (Standard TAT)														
Client I.D.	A.A. I.D.	Date	Time	Sample Matrix	No. of Cont	ANALYSIS REQUESTED (Test Name)							Special Instructions		
						TO_3	TO_15								
SVE-VGACI-061219-0001	9F12016-01	6/12/2019	14:15	Vapor	1	X									
For Laboratory Use				Relinquished by		Date	Time	Received by							
PRIORITY						6-12-19	14:40								
Rush Date	Hrs Time	SH Sign				6-12-19	16:27								
A.A. Project No.: A8731357/9F12016															

Note: By Relinquishing samples to American Analytics, Client agrees to pay for the services requested on this chain of Custody form and any additional client-requested analyses performed on this project. Payment for services is due within 30 Days from the date invoice. Sample(s) will be disposed of after 45 days following the submittal of the sample(s) To American Analytics.